

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

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**IN RE: METHYL TERTIARY BUTYL  
ETHER ("MTBE") PRODUCTS  
LIABILITY LITIGATION**

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**Master File No. 1:00-1898  
MDL 1358 (SAS)  
M 21-88**

**This document relates to:**

*City of Merced Redevelopment Agency v. Exxon  
Mobil Corp., et al.*, 08 Civ. 06306 (SAS)

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**DECLARATION OF A. CURTIS SAWYER IN SUPPORT OF  
PLAINTIFF CITY OF MERCED REDEVELOPMENT AGENCY'S  
OPPOSITION TO DEFENDANTS' MOTION FOR PARTIAL SUMMARY JUDGMENT  
RE NUISANCE AND TRESPASS**

I, A. Curtis Sawyer, hereby declare:

1. I am one of the attorneys in this case for plaintiff City of Merced Redevelopment Agency. I have been personally involved in much of the discovery and pretrial proceedings in this action. This Declaration is based on my personal knowledge and, if called as a witness, I could testify competently thereto.

2. Attached hereto as Exhibit 1 is a true and correct copy of a June 25, 1996, Letter from P. Pugnale, Shell Oil Company, to R. Ghirelli, California Regional Water Quality Control Board.

3. Attached hereto as Exhibit 2 is a true and correct copy of a letter dated September 29, 1997, from C.E. Flanikan, Ultramar, to California Environmental Protection Agency with attachment.

4. Attached hereto as Exhibit 3 is a true and correct copy of excerpts from the deposition of Arvel Shackelford taken May 18, 2009, in *City of Merced*.

5. Attached hereto as Exhibit 4 is a true and correct copy of excerpts from the deposition of Robert C. Donovan taken August 31, 2000, in *South Tahoe Public Utility District*.

6. Attached hereto as Exhibit 5 is a true and correct copy of a letter dated October 17, 2005, from Diana Pfeffer Martin to Robin Greenwald.

7. Attached hereto as Exhibit 6 is a true and correct copy of 1988 Health & Environmental Project Proposals.

8. Attached hereto as Exhibit 7 is a true and correct copy of excerpts from the deposition of Brian Pazin taken on August 25, 2009, in *City of Merced*.

9. Attached hereto as Exhibit 8 is a true and correct copy of American Petroleum

Institute Memorandum dated February 16, 1988, from David Chen.

10. Attached hereto as Exhibit 9 is a true and correct copy of relevant portions of the First Amended Complaint filed on March 4, 2013.

11. Attached hereto as Exhibit 10 is a true and correct copy of Minutes for the Public Focus Meeting dated December 17, 1986.

12. Attached hereto as Exhibit 11 is a true and correct copy of a Memorandum dated February 13, 1987, to O.B. Smith.

13. Attached hereto as Exhibit 12 is a true and correct copy of a Memorandum dated January 8, 1987, to Bob Drew from Judy Shaw.

14. Attached hereto as Exhibit 13 is a true and correct copy of a letter dated February 12, 1987, to Beth Anderson and a Jan 28, 1987 Letter from D. Chan to J. Lehr.

15. Attached hereto as Exhibit 14 is a true and correct copy of a letter dated February 27, 1987, to Beth Anderson.

16. Attached hereto as Exhibit 15 is a true and correct copy of a 1988 Health & Environmental Project Proposal.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 7th day of May, 2013, at Sacramento, California.

  
\_\_\_\_\_  
A. CURTIS SAWYER

# **EXHIBIT 1**

Shell Oil Products Company



P.O. Box 4948  
Anaheim, CA 92803

811 Markham Street  
Anaheim, CA 92801

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

JUNE 25, 1996

Dr. Robert Ghirelli, Executive Officer  
California Regional Water Quality Control Board  
Los Angeles Region  
101 Centre Plaza Drive  
Monterey Park, CA 91754-2156

RE: Methyl Tertiary Butyl Ether (MTBE) Pollution Investigation - City of Santa Monica  
Charcock Well Field (Your File NO. 94-442)

Dear Dr. Ghirelli:

The following information is furnished in response to your letter on this subject to Mr. Karen Haynes dated May 25, 1996. It responds to the specific information requested by Appendix A to your May 23 letter and provides it in the sequence that information is requested.

MTBE INFORMATION

Shell Oil Company SU2000E Gasoline, introduced in the first quarter of 1990, was the first Shell gasoline manufactured, transported or sold in California that contained MTBE. All Shell gasolines manufactured, transported and sold in California contained MTBE after October, 1992. Shell refineries located in Texas and Louisiana intermittently used MTBE to enhance gasoline octane levels beginning in early 1980. It is possible, but very unlikely, that these refineries supplied some tiny percentage of the gasoline Shell marketed in California in the 1980's. (Shell had three refineries located on the West Coast that supplied almost all of Shell's product throughout this period.) In addition, Shell occasionally purchased small amounts of gasoline on the open market to fulfill its needs. Since our purchase specifications did not reference MTBE during the 1980's and early 1990's, it is also possible that some of the purchased gasoline contained MTBE.

Enclosed as Attachment I are two documents authored by Mr. James M. Davidson of Alpine Environmental, Inc., Fort Collins, Colorado. These documents deal specifically with technical aspects associated with the issue of MTBE in ground water. Shell has no information about MTBE of any real significance to the issue of MTBE in ground water that is not adequately addressed in Mr. Davidson's work.

PIPELINE INFORMATION  
(Shell Pipe Line Corporation)

The Shell Pipe Line Corporation owns and operates the Ventura Products Pipeline located in a right-of-way within Sawtelle Boulevard. This pipeline lies immediately to the east of the Charcock Field as depicted on the sketch that accompanied your May 23 letter. A map showing the location of the sections of the Ventura Products

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Pipeline within a two mile radius of the Charnock Field is enclosed as Attachment II. This pipeline has been exclusively owned by the Shell Pipeline Corporation since prior to January 1, 1980, and has transported only Shell gasoline from that date to the present time.

Shell Pipeline Corporation also owns and operates the Ventura Crude Pipeline a small segment of which is located within some one and one-half miles of the Charnock Field. We have not included a map of this pipeline because it has never transported any substance that contains MTBE. The Ventura Crude Pipeline has been exclusively owned and operated by the Shell Pipeline Corporation since prior to January 1, 1980.

Copies of profile drawings for sections of the Ventura Products Pipeline located within two miles of the Charnock field are enclosed as Attachment III. These profile drawings show materials of construction, dates of installation and burial depth. The operational capacity of the segment of the line under discussion is approximately 725 barrels per hour.

No California Pipeline Safety Act hydrostatic tests have indicated that the line leaked. Copies of the tightness certification for tests performed in 1988 and 1993 are enclosed as Attachment IV. The Ventura Products Pipeline is continuously monitored whenever it is in operation. Pressure readings are compared via computer at intervals of less than 60 seconds. All recorded anomalies are investigated. None were found to be the result product releases.

Our records do not contain any indication of a product release within two miles of the Charnock field nor any indication of contaminated soil along the Ventura Products Pipeline right-of-way. Moreover, discussions with appropriate maintenance and operating personnel responsible for the Ventura Products Pipeline provided no indication of contamination.

Appendix A concludes with a request for a technical report that details an active program to evaluate the length of all petroleum pipelines within two miles of the Charnock Well Field. We believe it is inappropriate to perform any evaluation of the Ventura Crude Pipeline because it has never transported any substance that contains MTBE and because it's closer, <sup>approximately 2.5 miles</sup> one and one-half mile and one-half from the Charnock Field. We will take immediate steps to evaluate the Ventura Products Pipeline. The next California Pipeline Safety Act hydrostatic test of this pipeline is scheduled for 1998. However, we will now make arrangements to perform a California Pipeline Safety Act test of the segment within approximately two miles of the Charnock field during the third quarter of 1996. We will provide you with the results of this test immediately thereafter. Should these test results indicate that further evaluation is warranted, we will then provide a detailed description of our proposed follow-up investigation.

#### UNDERGROUND GASOLINE STORAGE TANKS INFORMATION: (Shell Oil Products Company)

There are three operating Shell stations in the list of sites located within the one-mile radius from the Charnock Wellfield. The three Shell stations are at the following locations:

1. 3500 Centinela, Los Angeles
2. 10815 National, Los Angeles
3. 3801 Sepulveda, Culver City

Attachment V contains the summary report addressing the items listed in Appendix A regarding underground gasoline storage tanks.

We believe that the foregoing provides all the information requested by Appendix A. Should you or your staff have any further questions, please contact our Carlton Jordan at (310) 816-2060 for matters related to the Ventura Products Pipeline or Karen Haynes at (714) 520-3393 for matters related to Shell service stations.

Yours truly,

FOR SHELL PIPE LINE CORPORATION:

*L. W. Alexander*  
L. W. Alexander, Manager  
Environmental and Technical

FOR SHELL OIL PRODUCTS COMPANY:

*P. J. Pagnall*  
P. J. Pagnall, Manager  
Engineering, Western Region

TFM  
KGH

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# **EXHIBIT 2**



**ULTRAMAR DIAMOND SHAMROCK  
C O R P O R A T I O N**



Charles E. Flaniken,  
Manager, Quality Control

September 29, 1997

California Environmental Protection Agency  
San Francisco Bay Regional Water Quality Control Board  
2101 Webster Street  
Suite 500  
Oakland, CA 94612

Gentlemen:

RE: Request for Information on Gasoline Additives, Letter dated July 29, 1997

As requested in your letter to Mr. Terry Fox of Ultramar Inc., here is a report detailing additives introduced into gasolines distributed in the San Francisco Bay Area by Ultramar Inc. and its predecessor companies during the period from 1978 to 1997.

We have attempted to provide all the information you requested. Kevin Graves of your staff was very helpful in clarifying the scope of your information gathering. If you have questions about the information included in the report, you may contact me directly at the telephone number listed on the letterhead below.

Respectfully,

C. E. Flaniken  
Manager, Quality Control

cc: T. Fox, S. Epperson (no attachment)

**ULTRAMAR DIAMOND SHAMROCK  
GASOLINE ADDITIVES  
SAN FRANCISCO BAY AREA, 1978 - 1997  
October 1, 1997**

**Prepared for: San Francisco Bay Regional Water Quality Control Board  
By: Charles E. Flaniken, Quality Control Manager**

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## **Scope**

This report is in response to your letter to Mr. Terry Fox of Ultramar Inc. dated July 29, 1997. In addition to the specific information requested about the identity, period of use, concentration, name of supplier, and available health & safety data for the various additives introduced into gasolines at the direction of Ultramar Inc. and its predecessor companies during the last 20 years, we will offer a brief overview of our business activities in the San Francisco Bay Area, discuss limitations to the data provided, and offer suggestions for other sources of information about other additives potentially included in the San Francisco Bay Area.

## **General Business Information**

Ultramar Diamond Shamrock is an independent oil company with headquarters in San Antonio, Texas. Through our subsidiary company, Ultramar Inc., and its predecessor companies, we have refined and marketed gasoline products in California for more than 65 years. We currently own and operate one refinery in California, located in Wilmington, CA. We operate more than 150 company owned service stations, identified with the Beacon or Ultramar brands, throughout the state and supply an additional 200 stations through Branded Contract agreements. Although we neither own nor operate any gasoline distribution terminals, we do supply product to the independent petroleum market through a number of third party terminals.

## **San Francisco Bay Area Business Activities**

Our business activities in the San Francisco Bay Area during the years 1978 - 1997 have been exclusively the additization, transportation, and marketing of petroleum products. We have never owned or operated a refinery or petroleum distribution terminal in the San Francisco Bay Area. We currently operate 47 company owned service stations in the greater San Francisco Bay Area distributed as follows:

<u>County</u>	<u>Number Company Owned Stations</u>
Alameda	6
Contra Costa	7
Marin	0
Napa	4
San Francisco	0
San Mateo	0
Santa Clara	9
Santa Cruz	9
Solano	5
Sonoma	7
Total	47

### **Brief History of Gasoline Additization in California**

Until 1992, gasoline additization was a matter of choice in California. No Federal or State regulations directly required the use of any type of gasoline additive. Use of additives was primarily dictated by (1) their effectiveness in achieving or maintaining compliance with general petroleum product specifications, such as ASTM specifications, (2) recommendations or requirements of OEMs, or (3) marketing considerations.

Over the years, additives have been injected into gasolines at a variety of points in the gasoline manufacturing and distribution system. Additives can be injected into gasoline blending components at the refinery (i.e. antioxidants), used as a blending component at the refinery (i. e. MTBE and other ethers), used as a blendstock at terminal transport truck loading racks (i.e. ethanol), and injected into finished gasolines at terminal transport truck loading facilities (i.e. fuel system detergent additives)

Although there were no direct requirements to use additives, beginning in the early 1970's provisions of the Federal Clean Air Act required additive manufacturers to register additives that were intended for use in transportation fuels with the Office of Fuel and Fuel Additive Registration.

The regulation also required fuel manufacturers to register all additives added to transportation fuels through their direct actions or under their direction and to report such use on a quarterly basis.

The use of detergent additives and oxygenates was mandated by Federal and State regulations beginning in 1992. Additive packages effective in controlling engine deposits were required in California by CARB regulation beginning in January, 1992. A part of the CARB detergent additive regulation required registration of all detergent additives intended for use by fuel suppliers and certification of all potential gasoline detergent additives by CARB staff.

Beginning in November, 1992, all California gasolines were required to have a minimum oxygen content of 1.8 wt% during the winter months to satisfy the requirements of both Federal and State Clean Air regulations. This necessitated the widespread use of oxygenates in California gasolines. Prior to this time, oxygenates were blended voluntarily for business purposes.

The use of detergent additives and oxygenates has been modified by subsequent regulations including Federal detergent additive regulations effective in January, 1994 and July, 1997, Federal RFG requirements effective in parts of California beginning in January, 1995, and CARB RFG regulations effective March, 1996.

### **Ultramar Inc. Gasoline Additives, San Francisco Bay Area**

Ultramar Inc. additization activities in the San Francisco Bay Area have been confined exclusively to additization of gasolines or non-oxygenated blendstocks at transport truck loading facilities located in third party terminals. Since we have not owned or operated these facilities, our role has always been an indirect one, selecting additives individually or jointly with other users of the system and monitoring and reporting use of the additives as required by good business practice and/or governmental regulation.

Since all of the gasoline sold by Ultramar Inc. and predecessor companies in the San Francisco Bay Area was refined and/or imported by other companies and was obtained by purchase from or exchange with another company, the

following list does not include additives that may have been added by others parties prior to our ownership of the gasolines or non-oxygenated blendstocks. A discussion of additives in purchased or exchanged gasolines is included in a later section, "Purchased/Exchanged Gasolines".

The following table lists the commercial or brand name of the additive, manufacturer, purpose for use, and approximate period of use in San Francisco Bay Area gasolines listed in chronological order. Additional notes on each additive follow the table and MSDS data for each additive are included as attachments.

Prior to 1981, no additives of any kind were added by Ultramar Inc. or its predecessor companies to gasolines sold in the San Francisco Bay Area. Nor did Ultramar Inc. or its predecessor companies direct others to inject additives specified by Ultramar Inc. into gasolines sold in the San Francisco Bay Area prior to 1981.

#### **Ultramar Inc. Gasoline Additives, 1981 - 1997**

Additive Name	Manufacturer	Purpose	Estimated Dosages	Period
Ethanol, Fuel Grade	Various	Octane Improver & Oxygenate	0 - 10 vol%	1981 - 1991
DMA 67Y	E. I. Dupont	Detergent & Corrosion Inhibitor	0 - 52 mg/l	1986 - 1991
Tolad MFA-10	Petrolite	Detergent & Corrosion Inhibitor	0 - 30 mg/l	1991
OGA 476PL	Chevron Chemical Co.	Detergent & Corrosion Inhibitor	0 - 877 mg/l	1991 - 1995
Ethanol, Fuel Grade	Various	Octane Improver & Oxygenate	0 - 6.2 vol%	1992 - 1995, Oct. - Feb.

**Ultramar Inc. Gasoline Additives, 1981 - 1997 (continued)**

Additive Name	Manufacturer	Purpose	Estimated Dosages	Period
8195C	Lubrizol Corp.	Detergent & Corrosion Inhibitor	0 - 528 mg/l	1993 - 1995
OGA 477PL	Chevron Chemical Co.	Detergent & Corrosion Inhibitor	0 - 483 mg/l	1995 - 1996
8192S	Lubrizol Corp.	Detergent & Corrosion Inhibitor	0 - 321 mg/l	1995 - 1997
8247E	Lubrizol Corp.	Detergent & Corrosion Inhibitor	0 - 184 mg/l	1997 -

**Ethanol, Fuel Grade (MSDS included):** Used as a gasoline extender and octane booster in a portion of the gasolines distributed by Ultramar Inc. during the period from 1981 - 1991. The ethanol used was supplied by a variety of suppliers, primarily Archers Daniel Midlands (ADM). Denatured fuel grade ethanol was blended into gasolines at 10 vol% at terminal transport truck loading racks during the years 1981 - 1991 and at 6.2 vol% from 1992 - 1995. While ethanol blended gasoline was sold at most company operated Beacon and Ultramar branded stations, gasolines without ethanol were also available at the option of independent branded dealers and other wholesale customers.

**DMA 67Y (MSDS included):** Added by ethanol suppliers to ethanol used for blending into a portion of the gasolines distributed by Ultramar Inc. in the San Francisco Bay Area from 1986 - 1991. DMA 67Y is a multifunctional additive manufactured by E. I. Dupont de Nemours, providing detergency and corrosion inhibition. This additive was included in the ethanol blended into gasolines as described above. Fuels blended with 10 vol% fuel grade ethanol



containing DMA 67Y yielded a concentration of about 51 mg/l of DMA 67Y in the finished blend. Not all gasolines distributed by Ultramar Inc. during the period contained DMA 67Y (See the discussion of fuel grade ethanol above.)

**Tolad MFA-10 (MSDS included):** Added to a portion of the gasolines distributed by Ultramar Inc. in the San Francisco Bay Area during 1991. Tolad MFA-10 is a multifunctional additive manufactured by Petrolite, providing detergency and corrosion inhibition. This additive was injected into gasolines by computer controlled systems at terminal transport truck loading racks at a dosage of about 30 mg/l. Tolad MFA-10 was not added to all gasoline sold in the San Francisco Bay Area in 1991. As additive injection systems were installed in third party terminals prior to CARB additive regulations taking effect in January, 1992, MFA-10 was introduced into gasolines distributed by Ultramar Inc. OGA 476PL was substituted for Tolad MFA-10 late in 1991.

**OGA 476PL (MSDS and Product Data sheet included):** Added to a portion of the gasolines distributed by Ultramar Inc. in the San Francisco Bay Area from 1991 - 1995. OGA 476PL is a multifunctional additive manufactured by Chevron Chemical Company, providing detergency and corrosion inhibition. This additive was injected into gasolines by computer controlled systems at terminal transport truck loading racks. OGA 476PL was not added to all gasoline sold in the San Francisco Bay Area from 1991 - 1995. OGA 476PL was replaced by Lubrizol 8195C in some gasolines supplied to the San Francisco Bay Area beginning in 1993 and replaced by OGA 477PL in other gasolines beginning in 1995. The maximum average dosage of OGA 476PL from a single supply terminal for a one month period between 1991 and 1995 was 877 mg/l.

**Lubrizol 8195C (MSDS and Product Data sheet included):** Added to a portion of the gasolines distributed by Ultramar Inc. in the San Francisco Bay Area from 1993 -1995. Lubrizol 8195C is a multifunctional additive manufactured by Lubrizol Corporation, providing detergency and corrosion inhibition. This additive was injected into gasolines by computer controlled systems at terminal transport truck loading racks. Lubrizol 8195C was not added to all

gasoline sold in the San Francisco Bay Area from 1993 - 1995. Lubrizol 8195C replaced OGA 476PL in some gasolines supplied to the San Francisco Bay Area beginning in 1993. Lubrizol 8195C was replaced by Lubrizol 8192S in 1995. The maximum average dosage of Lubrizol 8195C from a single supply terminal for a one month period between 1993 and 1995 was 528 mg/l.

**OGA 477PL (MSDS and Product Data sheet included):** Added to a portion of the gasolines distributed by Ultramar Inc. in the San Francisco Bay Area from 1995 - 1996. OGA 477PL is a multifunctional additive manufactured by Chevron Chemical Company, providing detergency and corrosion inhibition. This additive was injected into gasolines by computer controlled systems at terminal transport truck loading racks. OGA 477PL was not added to all gasoline sold in the San Francisco Bay Area from 1995 - 1996. OGA 477PL was gradually replaced by Lubrizol 8192S in gasolines supplied to the San Francisco Bay Area during 1995 and 1996. The maximum average dosage of OGA 477PL from a single supply terminal for a one month period between 1995 and 1996 was 483 mg/l.

**Lubrizol 8192S (MSDS included):** Added to a portion of the gasolines distributed by Ultramar Inc. in the San Francisco Bay Area from 1995 - 1997. Lubrizol 8192S is a multifunctional additive manufactured by Lubrizol Corporation, providing detergency and corrosion inhibition. This additive was injected into gasolines by computer controlled systems at terminal transport truck loading racks. Lubrizol 8192S was not added to all gasoline sold in the San Francisco Bay Area from 1995 - 1997. Lubrizol 8192S replaced Lubrizol 8195C in some gasolines supplied to the San Francisco Bay Area beginning in 1995 and gradually replaced OGA 477PL in other gasolines supplied to the San Francisco Bay Area during 1995 and 1996. Lubrizol 8192S was replaced by Lubrizol 8247E in 1997. The maximum average dosage of Lubrizol 8192S from a single supply terminal for a one month period between 1995 and 1997 was 321 mg/l.

**Lubrizol 8247E (MSDS and Product Data sheet included):** Added to a portion of the gasolines distributed by Ultramar Inc. in the San

Francisco Bay Area during 1997. Lubrizol 8247E is a multifunctional additive manufactured by Lubrizol Corporation, providing detergency and corrosion inhibition. This additive is injected into gasolines by computer controlled systems at terminal transport truck loading racks. Lubrizol 8192S was not added to all gasoline sold in the San Francisco Bay Area during 1997. Lubrizol 8247E replaced Lubrizol 8195C in some gasolines supplied to the San Francisco Bay Area in 1997. The maximum average dosage of Lubrizol 8247E from a single supply terminal for a one month period through the second quarter of 1997 was 184 mg/l.

### **Purchased/Exchanged Gasolines**

In the oil industry, it is a common practice for companies to supply gasolines to end use customers that they do not manufacture in their own refineries in order to reduce logistic expenses. These gasolines may either be purchased from another company or procured through an "exchange". An exchange is a reciprocal agreement to supply equivalent volumes of similar quality products to each other in agreed upon locations. The specifications governing the products exchanged are agreed upon in advance and are usually based on industry standards and/or regulatory requirements.

Additives were not often addressed in the exchange agreements prior to 1992. Therefore, companies such as Ultramar Inc. have little specific information about individual additives included in gasolines received from other companies through purchases or exchanges prior to 1992. A good example of lack of specific information is the leaded gasoline supplied in the San Francisco Bay Area by Ultramar Inc. prior to the prohibition of leaded gasoline by CARB regulation in 1992. We know that leaded gasoline provided to us through purchases or exchanges had lead contents potentially ranging from about 0.1 grams/gallon Pb to a maximum of 4.23 grams/gallon Pb. We do not know exact organic lead compound used (tetraethyl lead, tetramethyl lead, or a mixture of both), the supplier, or the brand name of the additive used to produce the gasoline we received for distribution.

Another example is oxygenated compounds, such as MTBE. Prior to 1992, unless a gasoline was intended for blending with ethanol or unless specifically

addressed in the purchase or exchange agreement, gasoline manufacturers were not required to disclose the use of oxygenates. Even today, gasolines are typically exchanged on the basis of minimum oxygen content and in the San Francisco Bay Area may contain from 0 - 2.7 wt% oxygen from February to October and 1.8 to 2.7 wt% oxygen from November - January. The type and amount of the oxygenate is typically not disclosed. Although we cannot provide detailed information about other oxygenates that may have been used in gasolines we received through purchases or exchanges, we have included MSDS data for MTBE in the attachments.

We do have limited information from our suppliers about detergent additives included in purchased or exchanged gasolines. The following additives have been used in gasolines supplied to Ultramar Inc. for distribution in the San Francisco Bay Area:

#### **Exchange Gasoline Additives, 1992 - 1997**

Supplier	Additive Name
Exxon	OGA 476TU, OGA 400EX
Shell	OGA 400DC, Lubrizol 8192S, Lubrizol 8247E

Dosage rates of these additives would best be supplied by the companies themselves and will likely be included in their response to your current request for information.

#### **Methodologies for Determining Additives in Soil and Water**

Ultramar Inc. has no unique proprietary methods for identifying or quantifying fuel additives in soil or water. As indicated in your letter, oxygenates can be readily measured at the ppb level in groundwater using Federally approved test methods. While manufacturers of detergent additives must submit to CARB methods for measuring the additive concentration in fuels as part of the certification process, questions about methods for measuring the detergent additives (typically high molecular weight poly-isobutene amines in a mineral

oil carrier fluid) would best be answered by the additive manufacturers. We will provide contacts with additive suppliers at your request.

### **Other Sources of Information**

If one purpose of this information gathering process is to define the universe of potential compounds that might be added to gasolines, the best source for such information might be the Office of Fuel and Fuel Additive Registration. The Office maintains lists of all additives approved for use in transportation fuels. The address is:

U. S. EPA  
Office of Fuel and Fuel Additive Registration  
401 M Street, SW  
Mail Code 64-06J  
Washington, DC, 20460.

Lists of certified deposit control additives are maintained by the CARB staff administered through the Stationary Source Division, Fuels Section. The address is:

California Environmental Protection Agency  
Air Resources Board  
Stationary Source Division  
Fuels Section  
2020 L Street  
P.O. Box 2815  
Sacramento, CA 95814

### **Further Information**

The information included in this report is accurate and complete to the best of our knowledge. We will provide further information or clarification of information included in this report at your request.

# **EXHIBIT 3**

SUPERIOR COURT OF THE STATE OF CALIFORNIA  
IN AND FOR THE COUNTY OF MERCED

--oOo--

CITY OF MERCED,

Plaintiff,

vs.

No. 148451

CHEVRON U.S.A., INC.; SHELL  
OIL COMPANY; EXXONMOBIL  
CORPORATION; EXXON  
CORPORATION; KINDER MORGAN  
ENERGY PARTNERS L.P.; EQUILON  
ENTERPRISES LLC; SFPP, L.P.  
and DOES 1 THROUGH 200,  
inclusive,

Defendants.

**COPY**

VIDEOTAPED DEPOSITION OF  
ARVEL SHACKELFORD  
(VOLUME I - PAGES 1 - 80)  
May 18, 2009

REPORTED BY: VALERIE NUNEMACHER, CSR, CCR, RPR

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Deposition of Arvel Shackelford / May 18, 2009

1 can read the question back to you so that you have it  
2 clear in your mind before you answer. Because this  
3 testimony is under oath, so it's important that we be  
4 accurate. That's the important part.

5 A. I understand.

6 Q. Okay. If you need time to read a document or  
7 to do something else before you answer, just let us know  
8 and we'll do our best to accommodate you today. Each of  
9 the attorneys will. We're also going to try and make  
10 good use of your time and get this over with.

11 A. Okay.

12 Q. Okay. I'm going to be asking you questions  
13 about a gasoline station that was located at 1415 R  
14 Street in Merced. Did you and your wife operate that  
15 station for over a decade?

16 A. Yes.

17 Q. And did you start leasing that station in  
18 approximately 1978?

19 A. '78 is when it was.

20 Q. And then did you later purchase the station  
21 from Mobil Oil Corporation?

22 A. From Mobil.

23 Q. And did you operate the station for about a  
24 decade after you purchased it?

25 A. Yes, but it was under Exxon.



Deposition of Arvel Shackelford / May 18, 2009

1 and I still remember it. Bias tire.

2 Q. So they asked you a question about what a bias  
3 tire was?

4 A. They asked the two kinds of tires and I could  
5 not think of bias.

6 Q. Okay. Once you started operating the station  
7 under the lease, it was Mobil-branded station?

8 A. Yes.

9 Q. Was it your understanding you were selling  
10 Mobil gasoline during that period you were leasing?

11 A. Yes.

12 MR. PARKER: Objection. Lacks foundation.  
13 Calls for speculation. And also calls for a legal  
14 conclusion.

15 MR. MILLER: Q. Well, actually the whole  
16 station was labeled, "Mobil." You had a big sign that  
17 said, "Mobil"? The dispensers were labeled, "Mobil"?  
18 The gas was labeled, "Mobil," correct?

19 A. Yes.

20 MR. PARKER: Objection. I'm sorry,  
21 Mr. Shackelford, we're now getting into some questions  
22 where I have an objection to the question that  
23 Mr. Miller raised -- or that he asked. So if you could  
24 pause for just a second --

25 THE WITNESS: Oh, okay.

Deposition of Arvel Shackelford / May 18, 2009

1 MR. PARKER: -- then I can get my objection on  
2 the record.

3 THE WITNESS: Okay.

4 MR. PARKER: Thank you, very much.

5 THE WITNESS: No problem.

6 MR. PARKER: I object to that question in that  
7 it is compound, leading, argumentative. States a legal  
8 conclusion incorrectly. Assumes facts not in evidence.  
9 And calls for speculation.

10 MR. MILLER: Here's the good part about what  
11 he said. There's a ground rule you need to remember.  
12 It helps the court reporter if we don't all talk at  
13 once. She prefers only one voice. It makes it a lot  
14 easier for her to do her job.

15 THE WITNESS: Sorry.

16 MR. MILLER: It's all right. We'll remind you  
17 if need be, but I'm pretty sure you'll remember. Could  
18 you reread the question please.

19 (Whereupon, the record was read as follows:

20 "Question: Was it your understanding you were  
21 selling Mobil gasoline during that period you  
22 were leasing?

23 "Answer: Yes.")

24 MR. MILLER: Q. And during the period that  
25 you were leasing from Mobil, the sign on the station

Deposition of Arvel Shackelford / May 18, 2009

1 said, "Mobil," the gasoline dispenser said, "Mobil,"  
2 correct?

3 MR. PARKER: Objection. Compound. Leading.

4 MR. MILLER: Q. You can answer.

5 A. Oh, yes. Yes.

6 Q. And certainly if you had Mobil's name out  
7 there on the dispenser, you knew the customers thought  
8 they were buying Mobil gas and you thought you were  
9 selling Mobil gas; is that correct?

10 MR. PARKER: Objection. Compound. Leading.  
11 Calls for speculation. Calls for a legal conclusion.

12 THE WITNESS: Yes.

13 MR. MILLER: Q. During that period of time  
14 that you were doing the lease, I would like you to  
15 describe whether representatives of Mobil would come out  
16 to the station and, if so, what they were doing.

17 A. They came to the --

18 MR. PARKER: Again, I'm sorry. Objection.  
19 Compound. Calls for a narrative.

20 MR. MILLER: Q. Go ahead, please.

21 A. They came about once a month. When one guy  
22 would come and he'd check and then take orders for oil  
23 and stuff like that from Mobil.

24 Q. From your communications with that  
25 representative, were you doing what they wanted you to

Deposition of Arvel Shackelford / May 18, 2009

1 do?

2 MR. PARKER: Objection. Lacks foundation.

3 Calls for speculation.

4 THE WITNESS: As far as I was -- know I was  
5 all right, because I bought the station from them after  
6 ten years. So other than that they would have kicked me  
7 out probably.

8 MR. MILLER: Q. Did they ever -- after an  
9 inspection or visit by a Mobil representative, did they  
10 ever tell you that they were unhappy with the way you  
11 were handling the station?

12 MR. PARKER: Objection. Mischaracterizes the  
13 testimony. Assumes facts not in evidence.

14 THE WITNESS: Never.

15 MR. MILLER: Q. Okay. In 1984, I want to  
16 focus on the purchase of the station from Mobil.

17 A. Okay.

18 Q. Was it your idea to buy the station or did  
19 they bring up the subject to you?

20 A. They said they were going to sell the station  
21 and I said, Well, if you are, I want to buy it.

22 Q. Okay. And did they tell you why they wanted  
23 to sell it?

24 A. No.

25 Q. When you discussed purchasing the station, do

15

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1 round pumps and they didn't want round pumps at an Exxon  
2 station. Because I switched over to Exxon.

3 Q. Okay. So after the purchase you entered into  
4 an arrangement to buy Exxon gasoline, correct?

5 A. Yes.

6 MR. PARKER: Objection. Lacks foundation.  
7 Calls for a legal conclusion.

8 MR. MILLER: Q. Who did you buy your gasoline  
9 from after you entered into the arrangement?

10 A. Curtesy Oil.

11 Q. And at the time that you switched to Curtesy  
12 Oil, did you change the signage for the service station?

13 A. Yes.

14 Q. And how did you change it? Used to be Mobil,  
15 what did it change to?

16 A. Exxon.

17 Q. Were there ever any other types of signs on  
18 the station as far as the brand of gasoline being sold  
19 other than Mobil or Exxon during your entire period that  
20 you owned or operated it?

21 A. No..

22 Q. From the time you entered into the agreement  
23 with Curtesy, was it your understanding that you were  
24 getting a particular brand of gasoline --

25 MR. PARKER: Objection.

Deposition of Arvel Shackelford / May 18, 2009

1 MR. MILLER: Q. -- from Curtesy?

2 MR. PARKER: Objection. Lacks foundation.

3 Calls for an expert and a legal opinion.

4 THE WITNESS: All I know it was Exxon and he  
5 was Exxon for a long time and I knew him since 1943 or

6 '44. I don't think we even signed an agreement. I  
7 think it was just verbal.

8 MR. MILLER: Q. Okay. So you had known him  
9 for quite a while?

10 A. I knew him before his kids were born, yep.

11 Q. Okay. Did you think that he had a good  
12 business reputation?

13 A. He did.

14 Q. And was he fair in his dealings with you?

15 A. Yes. Yes. Well, now -- it wasn't he, it was  
16 his sons because he's already 75 years old. But his  
17 sons -- I wouldn't have went with them if I didn't feel  
18 good about them. And I like -- I don't recall even  
19 writing a piece of paper that I would sell nothing but  
20 Exxon gas. They said they'll bring it to me and that  
21 was all.

22 Q. Okay. And on the bills, it showed that you  
23 were buying Exxon gasoline from them?

24 A. Yes.

25 MR. PARKER: Objection. Best evidence as to

1 STATE OF IDAHO }  
2 COUNTY OF KOOTENAI } ss.  
3

4 I, VALERIE NUNEMACHER, CSR, License No. 738, do  
5 certify:

6 That ARVEL SHACKELFORD, the witness in the  
7 foregoing deposition, was first duly sworn to testify to  
8 the truth, the whole truth, and nothing but the truth in  
9 the within-entitled cause;

10 That said deposition was reported by me at the time  
11 and place therein stated by me, a Certified Shorthand  
12 Reporter, and thereafter transcribed into typewriting;

13 I further certify that I am not interested in the  
14 outcome of said action, nor connected with, nor related  
15 to, any of the parties of said action or to their  
16 respective counsel.

17 IN WITNESS WHEREOF, I have hereunto set my hand  
18 this 1st day of June, 2009.

19

20

21

22

23

24

25

Valerie Nunemacher  
VALERIE NUNEMACHER, ID CSR No. 738

# **EXHIBIT 4**



IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA  
IN AND FOR THE COUNTY OF SAN FRANCISCO

SOUTH TAHOE PUBLIC UTILITY  
DISTRICT,

Plaintiff,

vs.

No. 999128

ATLANTIC RICHFIELD COMPANY  
("ARCO"); ARCO CHEMICAL COMPANY;  
SHELL OIL COMPANY; CHEVRON U.S.A.,  
INC.; EXXON CORPORATION; B.P.  
AMERICA, INC.; TOSCO CORPORATION;  
et al.,

Defendants.

VIDEOTAPED DEPOSITION OF ROBERT C. DONOVAN

August 31, 2000  
Sea-Tac, Washington

BYERS & ANDERSON, INC.

COURT REPORTING & VIDEO

2208 North 30th Street One Union Square  
Suite 202 600 University Street  
Tacoma, Washington 98403 Suite 2300  
253.627.6401 Seattle, WA 98101-4112  
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1

A In the fall of 1995, perhaps the summer of 1995, in  
various conversations with various environmental  
consultants in my employ -- "my" being Tesoro's employ,  
-- on the West Coast, discussions of MTBE became more  
common.

10:40 AM Q And why was that?

MS. MARTIN: Objection; calls for  
speculation, lacks foundation.

A The consultants brought it up. I don't know why. I  
don't know what their -- their background was to start  
feeling that they should raise this issue with me.

10:40 AM Q (By Mr. Sher) Which consultants do you have in mind  
when you refer to "consultants"?

A I remember specifically a conversation I had with the  
consulting company named Orion Environmental. And  
they're located in Long Beach, California.

10:40 AM Q Can you recall the circumstances of that conversation?

A I believe it was in the fall of 1995. And one of the  
staff scientists attended a conference on MTBE, or  
perhaps a conference that mentioned MTBE.

10:41 AM Q Do you recall who this staff scientist was?

A Her name was Mardi. And that is -- I'll spell that, if  
I may.

10:41 AM Q Yes, please.

A M-A-R-D-I. And her last name is -- was Read. And that

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Robert C. Donovan, 8/31/00 - by Mr. Sher

Byers & Anderson, Inc.  
Court Reporters & Video

is spelled R-E-E-D -- I'm sorry, that is spelled  
R-E-A-D. Correction.

10:41 AM Q And Ms. Read was a staff scientist with Orion  
Environmental?

A That's correct.

10:41 AM Q And she was the one that you said had attended a  
conference at which MTBE was discussed?

A To the best of my recollection.

10:42 AM Q To your knowledge, had MTBE been discovered at that  
point at any Tesoro sites?

A No.

10:42 AM Q What can you recall about the gist of the conversation  
that you had with Ms. Read?

A There was a discussion with regards to MTBE as an  
additive in its fait and transport to the environment.  
Ms. Read brought up the point -- and I must stress this  
as recollection of almost five years ago -- that there  
was a large body of toxicity data for MTBE. Apparently  
it had been used for medicinal purposes at some point.

This sparked me to learn more about MTBE.

10:43 AM Q What sort of investigation did you undertake at that  
point?

A I went to a conference. I believe that conference was  
in May of 1996 -- I'm sorry -- February 1996. I want to  
stress I believe that's when the conference was.

33

Robert C. Donovan, 8/31/00 - by Mr. Sher

Byers & Anderson, Inc.  
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10:43 AM Q Can you recall the title of the conference?

A No, I can't.

10:43 AM Q Can you recall where it was?

A It was in the LA area, but not LA proper.

10:43 AM Q Was MTBE the only topic of this conference?

A No, it wasn't.

10:43 AM Q Was it a topic at the conference?

A I'm not sure if it was on the agenda, but it was  
discussed.

10:44 AM Q Did you attend the conference for reasons other than  
MTBE?

A Yes, I did.

10:44 AM Q What were those other reasons?

A This was a conference where various members of two  
regional water quality control boards in the greater LA  
area were present. And I recall there was a panel  
discussion. And the main focus of the conference was  
RBCA; Risk Based Corrective Action. It's an acronym for  
Risk Based Corrective Action. And some of the -- the  
strategic fallout from recent reports out of Lawrence  
Livermore Laboratories on the fait and transport of  
gasoline plumes.

10:45 AM Q When you refer to fait and transport, are you referring  
to MTBE's persistence in movement in soil and  
groundwater?

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Robert C. Donovan, 8/31/00 - by Mr. Sher

1 (Break taken at 10:06 a.m.)  
2 THE VIDEOGRAPHER: This begins videotape No. 2  
3 in the deposition of Paul Dhillon. We are on the record  
4 and the time is 10:11 a.m.  
5 MR. EICKMEYER: Q. Mr. Dhillon, before we go  
6 on to the next exhibit, I think you mentioned a moment  
7 ago before the break that someone from the company would  
8 come by on occasion and look at your purchase records to  
9 see you were purchasing gas from the company?  
10 A. Yes.  
11 Q. When that person came by, was that called an  
12 area rep, or what was their title?  
13 A. Area rep.  
14 Q. Did that area rep ever give you any training  
15 about how to respond to a gasoline leak or spill at the  
16 station?  
17 MR. YBARRA: objection; asked and answered.  
18 THE WITNESS: I already answered this question.  
19 They already trained me, they gave me the booklet to do  
20 all those kind of things.  
21 MR. EICKMEYER: Well, okay. Thank you. I'm  
22 sorry. Let me -- let me try to ask it a little better.  
23 Q. Beside that initial training that you  
24 mentioned, when they would come out to the station  
25 periodically, did they ever give you any more training?

1 A. They send us some videos to update those  
2 things, yes, they do.  
3 Q. Did they ever give you any different  
4 instructions other than using the kitty litter product  
5 that you discussed earlier?  
6 A. For small spills or what?  
7 Q. Right. Did they ever tell you any different  
8 way that you should be cleaning up a small spill or leak  
9 at the station?  
10 A. Yes, there are different ways, too.  
11 Q. What else did they tell you beside the kitty  
12 litter product?  
13 A. Some other product come on the market, to buy  
14 those if you want to, or use this products, or different  
15 products are available.  
16 Q. Did they ever tell you that you should switch  
17 from the kitty litter product --  
18 A. No.  
19 Q. -- to some other one?  
20 A. No.  
21 Q. Did you continue using the kitty litter product  
22 during the entire time you operated the East Avenue  
23 station?  
24 A. Yes.  
25 Q. Approximately how often would the area rep come

And we have agreed that rather than going through those document by document in the deposition, much of which would require us to specifically designate the transcript as confidential, that counsel will work together to authenticate these documents as appropriate for other purposes in the litigation.

Is that fair?

MS. MARTIN: We agree.

MR. SHER: Is that correct?

MS. MARTIN: That's correct.

Q (By Mr. Sher) Let me just ask you, there's a fourth site that I wanted to ask you if you recall, in La Mirada, California; a former Lucky Store property at which there's an MTBE plume. Is that --

A Yes.

Q And is that in addition to the three sites that you identified previously?

A Yes, it is.

Q And are there any other sites in California that you're aware of at which there are -- in which there is MTBE present?

MS. MARTIN: Objection; calls for speculation. And it's outside of the scope of the designated issues or the document demands. So --

MR. SHER: Well, what I'm trying to

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Robert C. Donovan, 8/31/00 - by Mr. Sher

should just clarify, during meet and confer, we explained that we were not producing any documents that would be spill response plans related to refinery activities.

Q (By Mr. Sher) Okay. Setting aside spill responses at refineries.

A There are no other documents that I am aware of.

Q In your capacities at Tesoro in environmental management, has your company ever, to your knowledge, prepared any risk assessment to evaluate the likelihood that gasoline containing MTBE would be released into the environment?

A No, we have not.

Q Has your department at Tesoro ever performed any analysis of whether upgraded gasoline storage tanks reduced the incidence of gasoline releases into the environment?

A No, we have not.

Q Has your company ever estimated the cost of remediating MTBE releases into the environment --

MS. MARTIN: Objection --

Q (By Mr. Sher) -- from retail gasoline stations?

MS. MARTIN: Objection; vague and ambiguous, calls for speculation, and lacks foundation.

A Could you repeat the question, please?

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Robert C. Donovan, 8/31/00 - by Mr. Sher

MR. SHER: I have read the correspondence.

MS. MARTIN: Okay, go ahead.

MR. SHER: And I'm entitled to have a witness, who is under oath, tell me whether certain representations about the existence or lack of existence of documents are accurate to his understanding.

MS. MARTIN: Okay.

A I know of no such documents.

Q (By Mr. Sher) Is there any other department at Tesoro, that you know of, that would be responsible for practices, procedures, or precautions which would be followed in cleaning up or remediating a spill of gasoline containing MTBE?

A No, there's not.

Q Now, Counsel earlier told us that there was one document produced in response to Question No. 23, which asks for any practices, procedures, or precautions which should be followed in cleaning up or remediating a spill of gasoline since 1992.

And I don't want to -- other than the document that has been produced to us, the one document which is dated 1991, are you aware of any other responsive documents?

MS. MARTIN: Again, I believe we

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Robert C. Donovan, 8/31/00 - by Mr. Sher

MR. SHER: Let's have it read back.  
(Question on Page 113, Lines 19 through 20, and 22, read by the reporter.)

A Tesoro estimates probable expenditures for all releases that we are responsible for.

Q (By Mr. Sher) And in performing those kinds of estimates, have you ever distinguished between releases including MTBE and releases that do not include MTBE?

A No, we have not.

Q To your knowledge, has anybody in your department at Tesoro performed any economic analysis of the environmental impacts of using MTBE in your gasoline?

MS. MARTIN: Objection; vague and ambiguous, lacks foundation, calls for speculation.

And further, we have responded to these exact written discovery requests twice. Mr. Donovan already verified these responses under oath. He -- these are duplicative of Discovery Request No. 124 that we responded to and he verified.

MR. SHER: We will get through this very quickly if you would just allow the witness to answer.

A Would you repeat the question?

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Robert C. Donovan, 8/31/00 - by Mr. Sher

Q (By Mr. Sher) Sure.

MR. SHER: Read it back

(Question on Page 114, Lines 12

through 14, read by the

reporter.)

MS. MARTIN: Same objections.

A No, they have not.

MR. SHER: Let's go off the record

for a minute.

THE VIDEOGRAPHER: We are now going

off the record. The time is 2:20.

(Discussion off the record.)

THE VIDEOGRAPHER: We are now back

on the record. The time is 2:21.

Q (By Mr. Sher) Mr. Donovan, will you briefly summarize your educational background since high school?

A I have a bachelor's of science degree in geology from the University of Nebraska at Lincoln.

Q When did you get that?

A I graduated in 1982.

That was followed by a master's of science degree in geology from the University of Wyoming. And that was obtained in 1986.

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Robert C. Donovan, 8/31/00 - by Mr. Sher

STATE OF WASHINGTON )  
County of Pierce )

I, KARMEN M. KNUDSON,  
ss. CCR #KN-UD-SK-M310KT, a  
duly authorized Notary  
Public in and for the  
State of Washington  
residing at Tacoma,  
do hereby certify:

That the foregoing deposition of ROBERT C. DONOVAN was taken before me and completed on August 31, 2000, and thereafter was transcribed under my direction; that the deposition is a full, true and complete transcript of the testimony of said witness, including all questions, answers, objections, motions and exceptions;

That the witness, before examination, was by me duly sworn to testify the truth, the whole truth, and nothing but the truth, and that the witness reserved the right of signature;

That I am not a relative, employee, attorney or counsel of any party to this action or relative or employee of any such attorney or counsel and that I am not financially interested in the said action or the outcome thereof;

That I am herewith securely sealing the said deposition and promptly delivering the same to Attorney Victor M. Sher.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal this day of , 2000.

KARMEN M. KNUDSON, CSR, RFR, CRR,  
Notary Public in and for the State  
of Washington, residing at Tacoma.

121

Certificate

83/31/95 16:13:82 VIA FAX

->

713 293 3385 meyers, jeff

Page 882

FROM: API-HESD WASH DC

TO:

VIA XPEDITE

MAR 31. 1995 4:04PM #840 P.02

American Petroleum Institute  
1220 L Street, Northwest  
Washington, D.C. 20005  
202 682-8345  
202/682-8270 (Fax)



Bruce J. Bauman, Ph.D.  
Health & Environmental Sciences Department

March 31, 1995

TO: Soil/Groundwater Technical Task Force

FROM: Bruce Bauman

RE: USGS VOC / MTBE in Groundwater Study

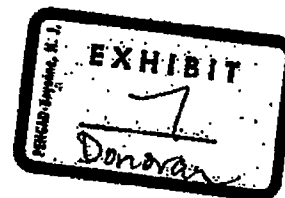
Here is the fact sheet the USGS has compiled that summarizes the report they will release next week. Also attached are a couple of pages we extracted from the USGS home page on the Internet's World Wide Web:

<[http://www/rvares.er.usgs.gov/nawqa/nawqa\\_home.html](http://www/rvares.er.usgs.gov/nawqa/nawqa_home.html)>

The fact sheet is also available at that location. The last page of the USGS release also notes other contacts for further information. We will learn more from them during the briefing they will give us here at API next Tuesday, April 4 at 3:30 PM. Enjoy!

cc: H. Hopkins  
R. Claff  
J. Shaw  
S/GTTF file

*cc: Leck Hoffman, Billings  
Chuck Wolmann, Dave  
Terry Lavitt, Ponce  
Jeff Baker, Lalo Llanos  
Ran Gantz, Ponce  
Bill Broddie, Harte  
RT circulation  
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TS1 003540

MAR 31 '95 15:11

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PAGE.002

83/31/95 16:13:27 VIA FAX

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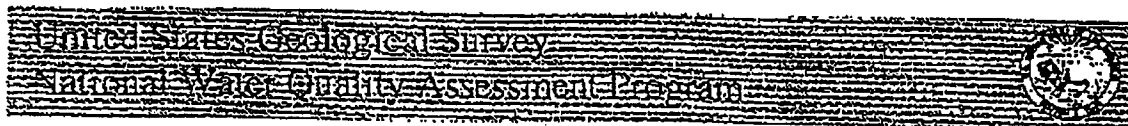
Page 883

FROM: API-HESD WASH DC

TO:

VIA XFEDITE

MAR 31, 1995 4:04PM #840 P.03



## Occurrence of the Gasoline Additive MTBE in Shallow Ground Water in Urban and Agricultural Areas

Methyl tert-butyl ether (MTBE) is a volatile organic compound (VOC) derived from natural gas that is added to gasoline either seasonally or year round in many parts of the United States to increase the octane level and to reduce carbon monoxide and ozone levels in the air. In 1993, production of MTBE ranked second among all organic chemicals manufactured in the United States. Currently, the U.S. Environmental Protection Agency (EPA) tentatively classifies MTBE as a possible human carcinogen. Health complaints related to MTBE in the air were first reported in Fairbanks, Alaska in November 1992 when about 200 residents reported problems such as headaches, dizziness, eye irritation, burning of the nose and throat, disorientation, and nausea. Similar health complaints have been registered in Anchorage, Alaska; Missoula, Montana; Milwaukee, Wisconsin; and New Jersey.

As part of the U.S. Geological Survey's National Water-Quality Assessment (NAWQA) Program, concentrations of 60 VOCs were measured in samples from 211 shallow wells in 8 urban areas and 524 shallow wells in 20 agricultural areas. Chloroform and MTBE were the two most frequently detected VOCs. MTBE was detected in 27 percent of the urban wells and 1.3 percent of the agricultural wells. Concentrations ranged from less than the detection level of 0.2 µg/L (micrograms per liter) to as high as 23,000 µg/L. When detected, the median concentration of MTBE was 0.6 µg/L. MTBE was most frequently detected in shallow ground water in Denver, Colorado and urban areas in New England. In Denver, 79 percent of the samples from shallow urban wells had detectable concentrations of MTBE and in New England, 37 percent of the samples from urban wells had detectable concentrations. Only 3 percent of the wells sampled in urban areas had concentrations of MTBE that exceeded 20 µg/L, which is the estimated lower limit of the EPA draft drinking water health advisory level. Contaminant concentrations below the health advisory are not expected to cause any adverse effects over a lifetime of exposure. MTBE is on the EPA's Drinking Water Priority List, which means it is a possible candidate for future regulation.

### What Is MTBE and why Is It used?

The Clean Air Act Amendments of 1990 mandate that compounds that add oxygen (oxygenates) be added either seasonally or year round to gasoline in specific parts of the country where concentrations of ozone in the summer or carbon monoxide in the winter exceed established air-quality standards. Oxygenates are added to increase the octane of gasoline and to improve air quality in urban areas. Oxygenates are added to more than 30 percent of the gasoline in the United States, and by the end of this decade, the Oxygenated Fuels Association has estimated that oxygenates will be added to 70 percent of the gasoline. MTBE is a commonly used oxygenate because of its low cost, ease of production, and favorable transfer and blending characteristics. It is

made from methanol, which is derived primarily from natural gas. Gasoline can contain up to 15 percent MTBE by volume. In 1993, 24 billion pounds of MTBE worth about \$3 billion was produced in the United States. Domestic production of MTBE and its use in the United States decreases the need for foreign oil.

### Why Is MTBE of Interest?

About 109 million Americans live in counties where MTBE is believed to be used (fig.1). Health complaints related to MTBE in the air were first reported in Fairbanks, Alaska in November 1992 when about 200 residents reported headaches, dizziness, irritated eyes, burning of the nose and throat, coughing, disorientation, and nausea after MTBE had been added to gasoline. Health complaints also have been registered in Anchorage, Alaska; Missoula, Montana; Milwaukee, Wisconsin; and New Jersey. Studies done by the Centers for Disease Control and Prevention in Fairbanks, Alaska; Albany, New York; and Stamford, Connecticut have shown that the concentration of MTBE in the blood is related to the concentration of MTBE in the air. People with the greatest exposure, such as gasoline service station attendants and automobile mechanics, had the largest concentrations of MTBE in their blood (ranging from less than 0.05 to 37 µg/L); however, even commuters had measurable concentrations of MTBE in their blood (ranging from less than 0.05 µg/L to 2.6 µg/L). Furthermore, the study in Fairbanks showed that among commuters there was a significant increase in the concentration of MTBE in their blood as a result of exposure to MTBE while driving. Detectable concentrations of MTBE were found in the blood of all those tested 2 months after the use of MTBE was suspended in Alaska.

### What are the sources of MTBE?

All sources of MTBE released to the environment are not well documented. The release of MTBE in 1992 from industry in the United States accounted for only 0.03 percent of the MTBE that was produced. According to EPA's Toxic Release Inventory for 1992, about 94 percent of the MTBE released from industry was released to the air, 3.5 percent was discharged to surface water, and 2.5 percent was injected into wells. Releases of MTBE in addition to those from industry have not been quantified. For example, the amount of MTBE released during refueling at service stations and from mobile sources such as vehicles is unknown, but may be an important source of MTBE in the environment. Leaking underground storage tanks and spills at the land surface are also sources of MTBE in the environment.

### What are the chemical properties of MTBE and its fate in the environment?

MTBE is an ether. It is a volatile, flammable, colorless liquid at room temperature, and it smells like turpentine.

TS1 003541

MAR 31 '95 15:12

VIA FAX

PAGE.003



83/31/95 16:14:46 VIA FAX

-&gt;

713 293 3385 meyers, jeff

Page 884

FROM: API-HESD WASH DC

TO:

VIA XPD:TE

MAR 31, 1995 4:25PM #840 P.04

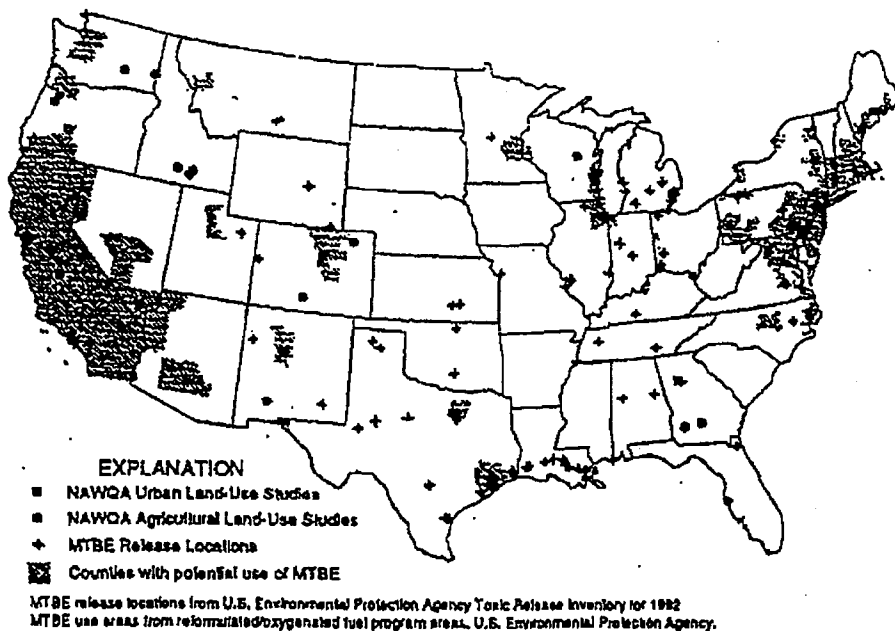


Figure 1. Location of urban and agricultural areas studied, and locations where MTBE may be released and used.

MTBE mixes with gasoline and is soluble in water, alcohol, and other ethers. Because of its chemical characteristics, MTBE would be expected to be found primarily in the atmosphere and in water. Results of a computer model used by Environment Canada for southern Ontario showed that 56 percent of MTBE in the environment should be found in the air, 43 percent in surface water and only about 0.5 percent in soil or streambed sediment. This model predicts where MTBE may be found in the environment but needs to be verified by environmental sampling. Although MTBE will volatilize from soils, it is also highly mobile in soil and can move into ground water. Once in ground water, MTBE resists decay when compared to other gasoline components like benzene. In surface water, MTBE is not expected to bioaccumulate in aquatic organisms.

It is hypothesized that MTBE moves with water in the hydrologic cycle (fig. 2), but more data are needed to determine the extent of the movement. MTBE is released to the air from sources such as industry and vehicles. Once in the air, MTBE can mix with precipitation that may eventually carry MTBE to the ground water or to streams. The MTBE detected in snow samples collected in Denver, Colorado by U.S. Geological Survey scientists supports this hypothesis. Alternatively, gasoline spills may directly contribute to MTBE contamination of ground water and surface water.

### Where, how frequently, and at what concentrations is MTBE found in shallow ground water?

The concentrations of MTBE and 59 other VOCs were measured in samples of shallow ground water from 211 urban wells and 324 agricultural wells in 1993-94. These monitoring wells are located in 8 urban and 20 agricultural areas. These urban areas were located where MTBE was released to the environment by industry or is potentially used in gasoline. Some of the wells were constructed for the NAWQA studies, whereas others were existing wells. Wells for these studies were randomly located within specific land-

use areas to allow comparison of shallow ground-water quality with land use. Urban wells were located in industrial, commercial, residential, and recreational areas, while agricultural wells were located in various crop areas.

Water-quality data from urban and agricultural areas show that MTBE occurs predominantly in shallow ground water underlying urban areas. MTBE was detected in 27 percent of urban wells, and in 1.3 percent of agricultural wells distributed across the United States, with concentrations ranging from less than the detection level of 0.2 µg/L to 23,000 µg/L. The concentrations of MTBE in ground water from eight urban areas are shown in figure 3. When detected, the median concentration of MTBE was 0.6 µg/L.

MTBE was detected in shallow ground water in all eight urban land-use studies but was detected in ground water from only 3 of 20 agricultural areas studied. For the urban areas, MTBE was most frequently detected in Denver, Colorado, and in urban areas in New England (fig. 4). In Denver, 79 percent of the shallow urban wells (23 of 29 wells) had detectable concentrations of MTBE, and in New England (specifically urban areas within Connecticut, Massachusetts, and Vermont), 37 percent of the wells (13 of 35 wells) had detectable concentrations of MTBE. Other urban areas where MTBE was detected included Reno, Nevada; Albany, New York; Dallas/Fort Worth, Texas; Las Vegas, Nevada; Atlanta, Georgia; and Albuquerque, New Mexico. Within agricultural land-use areas, MTBE was detected in southern Colorado, New England, and eastern Pennsylvania.

MTBE was the second most commonly detected VOC in water from urban wells. Of the 211 urban wells tested, 28 percent had chloroform; 27 percent had MTBE; 18 percent had tetrachloroethene; 10 percent had trichloroethene; 7 percent had cis-1,2 dichloroethene; 5 percent had 1,1-dichloroethane; and 5 percent had benzene. There are many potential sources for these other chemicals; however, 1,1-dichloroethane and benzene are used in gasoline, and chloroform has been identified in automobile exhaust.

MAR 31 '95 15:10

VIA FAX

TS1 003542

PAGE.884

83/31/95 16:15:45 VIA FAX

-&gt;

713 293 3385 meyers, jeff

Page 885

FROM: API-HESD WASH DC

TO:

VIA XPRDITE

MAR 31, 1995 4:26PM #840 P.05

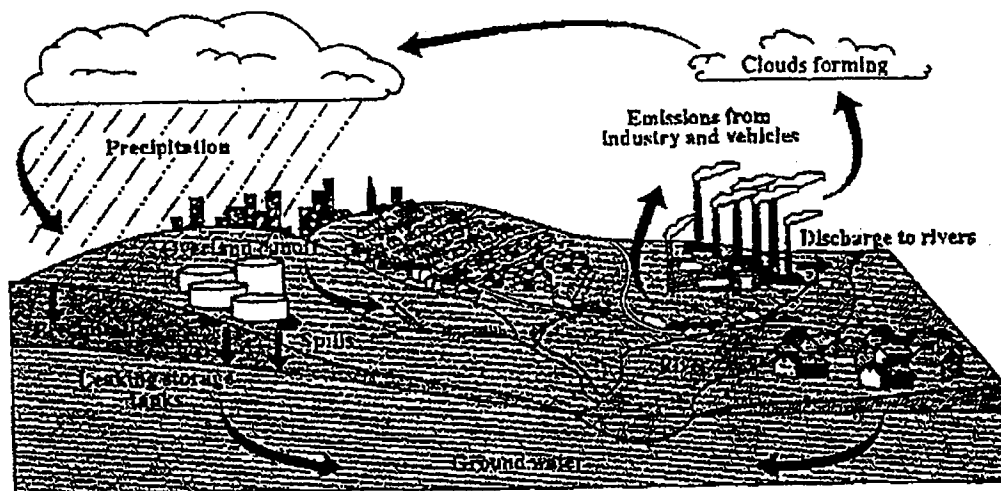


Figure 2. The movement of MTBE in the environment.

### Do the concentrations of MTBE in ground water pose a threat to human health?

The EPA draft drinking water lifetime health advisory for MTBE is estimated to fall within the range of 20-200 µg/L. The health advisory is the maximum concentration in drinking water that is not expected to cause any adverse effects over a lifetime of exposure, with a margin of safety. EPA expects to issue the final health advisory in the fall of 1995. EPA tentatively classifies MTBE as a possible human carcinogen. MTBE is also on the EPA's Drinking Water Priority List which means it is a possible candidate for future

regulation. There are no current Federal regulations that require municipalities to test for MTBE in drinking water.

The water sampled by U.S. Geological Survey scientists was located near the top of the water table and is the ground water most likely to show contamination from sources at the land surface. In seven of the eight urban areas studied, the sampled ground water is the uppermost part of an aquifer used for drinking water or is possibly connected to an underlying aquifer, which is used as a municipal water supply.

None of the urban wells sampled were being used as a source of drinking water. In general, public water supplies draw water from deeper parts of the ground water system.

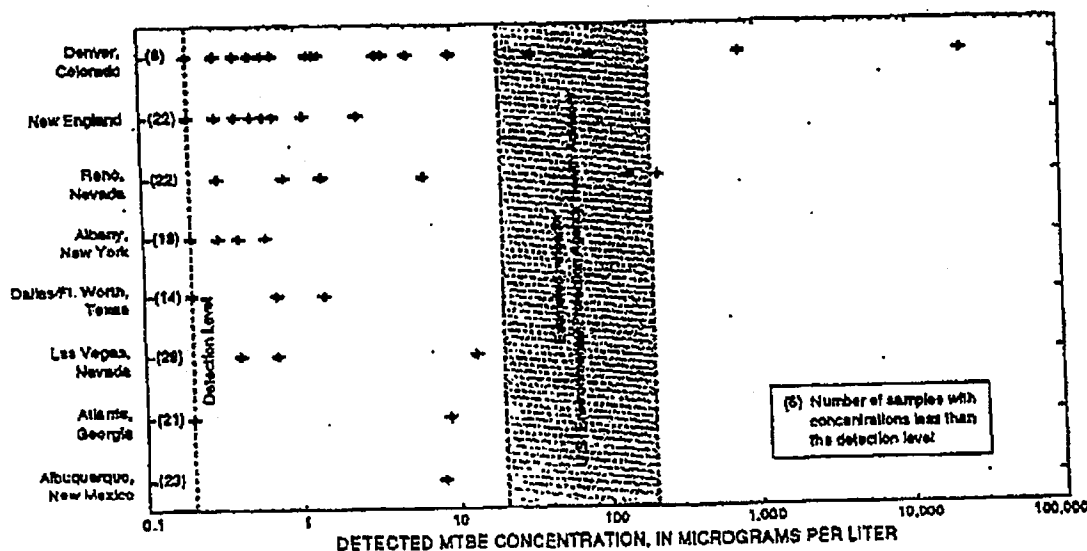


Figure 3. The concentrations of MTBE in each of the eight urban study areas.

TS1 003543

MAR 31 '95 15:14

VIA FAX

PAGE.005



83/31/95 16:16:43 VIA FAX

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713 293 3385 meyers, jeff

Page 886

FROM: AP: HESD WASH DC

TO:

VIA XPD:TE

MAR 31, 1995 4:26PM #840 P.06

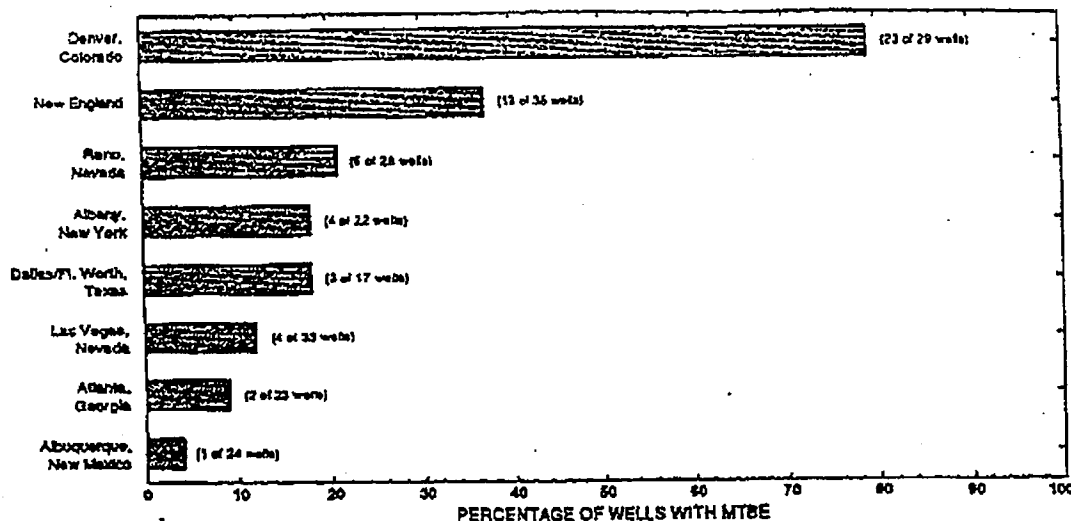


Figure 4. The frequency of detection of MTBE for each urban study area.

and there are few data showing concentrations of MTBE at these deeper depths. Of the urban monitoring wells tested, about 24 percent had concentrations of MTBE ranging from 0.2 to 20.0 µg/L, and 3 percent had concentrations exceeding 20.0 µg/L.

#### What are the implications of this study?

NAWQA data show that MTBE is found predominantly in shallow ground water in urban areas; however, many questions need to be answered. For example:

(1) Can MTBE in shallow ground water be traced to non-point mobile sources, such as vehicle emissions? Alternatively, how much MTBE in shallow ground water is due to point-source spills or leaking underground storage tanks?

(2) Do other fuel oxygenates occur in shallow ground water in urban areas?

(3) What is the fate of MTBE and other possible oxygenates in shallow ground water; will these oxygenates degrade over time due to natural processes, or will they accumulate in ground water?

(4) What are the concentrations of MTBE and other oxygenates in the air, in precipitation, and in surface water in urban areas? Is MTBE transported to ground water by infiltration of precipitation?

The U. S. Geological Survey will be working on these questions in cooperation with city and state organizations, and other Federal agencies.

#### Suggestions for further reading

Leahy, P.P., and Thompson, T.H., 1994, U. S. Geological Survey National Water-Quality Assessment Program: U. S. Geological Survey Open-File Report 94-70, 4 p.

Momville, M.R., Liu, Shi, and Suffita, J.M., 1994, Anaerobic biodegradation of gasoline oxygenates—extrapolation of information to multiple sites and redox conditions: *Environmental Science and Technology*, v. 28, no. 9, p. 1727-1732.

March, 1995

Reichhardt, Tony, 1995, A new formula for fighting urban ozone: *Environmental Science and Technology*, v. 29, no. 1, p. 36A-41A.

Government of Canada, 1992, Canadian Environmental Protection Act. Priority substances list, assessment report no. 5, methyl tertiary-butyl ether: Ottawa, Canada, 19 p.

Moolenaar, R.L., Heflin, B.J., Ashley, D.L., Middaugh, J.P., and Eizel, R.A., 1994, Methyl tertiary butyl ether in human blood after exposure to oxygenated fuel in Fairbanks, Alaska: *Archives of Environmental Health*, v. 49, no. 5, p. 402-409.

U.S. Environmental Protection Agency, 1994, Health Risk Perspectives on Fuel Oxygenates. Office of Research and Development; EPA report no. EPA/600/R-94/217, Washington, D.C.

U.S. Environmental Protection Agency, 1993, Assessment of Potential Health Risks of Gasoline Oxygenated with Methyl Tertiary Butyl Ether (MTBE), Office of Research and Development; EPA report no. EPA/600/R-93/206, Washington, D.C.

—Paul J. Squillace, Darryl A. Pope, and Curtis V. Price  
Information on technical reports and hydrologic data related to NAWQA can be obtained from:  
NAWQA VOC National Synthesis  
U.S. Geological Survey, WRD  
1608 Mt. View Rd.  
Rapid City, SD 57702

Additional information on NAWQA and other U.S. Geological Survey programs can be found by accessing the NAWQA "home page" on the World Wide Web at "[http://www.wrres.er.usgs.gov/nawqa/nawqa\\_home.html](http://www.wrres.er.usgs.gov/nawqa/nawqa_home.html)."

Additional information on health effects of MTBE and drinking water regulations can be obtained by calling EPA's Safe Drinking Water Hotline 1-800-426-4793.

U.S. Geological Survey, Fact Sheet FS-114-95

TS1 003544

MAR 31 '95 15:15

VIA FAX

PAGE.086

03/31/95 16:17:33 VIA FAX

-&gt;

713 293 3385 meyers, jeff

Page 887

FROM: API-HESD WASH DC TO: VIA XPEDITE MAR, 31, 1995 4:07PM HB40 P.07  
 MTBE data from Agricultural studies  
 MTBE data from 20 Agricultural Land-Use Studies

**MTBE DATA**

To see the MTBE data for a particular study click on the study name in the table below.

Note: Latitude and Longitude coordinates are of variable accuracy.  
 For more information about these data, contact the individual listed at the end of each group of concentration data.

Study Name	Number of wells where MTBE was detected	Number of wells sampled	Percent of wells where MTBE was detected
Appalachicola Chattahoochee Basin	0	32	0
Albemarle-Pamlico	0	20	0
Central Columbia Plateau #1	0	45	0
Central Columbia Plateau #2	0	21	0
New England (CT-MA-VT)	2	22	9
Florida- Georgia	0	23	0
Lower Susquehanna River Basin	4	30	13
Potomac River Basin	0	17	0
Rio Grande River Basin #1	0	20	0
Rio Grande River Basin #2	1	35	3
San Joaquin-Tulare #1	0	20	0
San Joaquin-Tulare #2	0	20	0
South Platte	0	30	0
Upper Snake River Basin #1	0	31	0
Upper Snake River Basin #2	0	28	0
Upper Snake River Basin #3	0	30	0
Willamette River Basin #1	0	15	0
Willamette River Basin #2	0	26	0
Western Lake Michigan #1	0	28	0
Western Lake Michigan #2	0	30	0
<hr/>			
	7	524	1.3

#### Appalachicola Chattahoochee Basin Agricultural Land-Use Study

USGS station number	Latitude	Longitude	Date	MTBE concentration (micrograms per Liter)
305641084542001	305641	845420	1993.08.26	Appalachicola Chattahoochee Basin NAWQA
David Wangness, NAWQA Chief U.S. Geological Survey Georgia District (404) 903-9100				
Return to summary of MTBE data				

- 1 -

TS1 003545

MAR 31 '95 15:16

VIA FAX

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83/31/95 16:18:14 VIA FAX

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713 293 3385 meyers, jeff

Page 888

FROM: API-HESD WASH DC

TO:

VIA XPEDITE

MAR 31, 1995 4:07PM #840 P.08

NAWQA VOC National Synthesis  
Recommended Target VOC Analytes (3/16/95)

**ANALYTES IN  
USGS STUDY**

These VOCs have been chosen for study for FY 96-98. This list is currently being reviewed for analytical feasibility.

Cas #	Compound	On (USGS Lab) Schedule 2090
56-23-5	TETRACHLOROMETHANE (CARBON TETRACHLORIDE)	Yes
67-66-3	TRICHLOROMETHANE (CHLOROFORM)	Yes
67-72-1	HEXACHLOROETHANE	No
74-83-9	BROMOMETHANE	Yes
74-87-3	CHLOROMETHANE	Yes
75-09-2	DICHLOROMETHANE (METHYLENE CHLORIDE)	Yes
75-25-2	TRIBROMOMETHANE (BROMOFORM)	Yes
75-27-4	BROMODICHLOROMETHANE	Yes
78-87-5	1,2-DICHLOROPROPANE	Yes
79-00-5	1,1,2-TRICHLOROETHANE	Yes
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	Yes
96-18-4	1,2,3-TRICHLOROPROPANE	Yes
106-93-4	1,2-DIBROMOETHANE (EDB)	Yes
107-06-2	1,2-DICHLOROETHANE	Yes
124-48-1	DIBROMOCHLOROMETHANE	Yes
75-01-4	CHLOROETHENE (VINYL CHLORIDE)	Yes
77-47-4	1,2,3,4,5,5-HEXACHLORO-1,3-CYCLOPENTADIENE	No
79-01-6	TRICHLOROETHENE	Yes
87-68-3	1,1,2,3,4,4-HEXACHLORO-1,3-BUTADIENE	Yes
50-00-0	FORMALDEHYDE	No
593-60-2	BROMOETHENE	No
10061-01-5	CIS-1,3-DICHLORO-1-PROPENE	Yes
10061-02-6	TRANS-1,3-DICHLORO-1-PROPENE	Yes
71-43-2	BENZENE	Yes
91-20-3	NAPHTHALENE	Yes
108-90-7	CHLOROBENZENE	Yes
120-82-1	1,2,4-TRICHLOROBENZENE	Yes
608-93-5	PENTACHLOROBENZENE	No
107-02-8	ACROLEIN	No
107-30-2	CHLOROMETHYL METHYL ETHER	No
123-91-1	1,4-DIOXANE	No
505-60-2	BIS(2-CHLOROETHYL) SULFIDE	No
111-44-4	BIS(2-CHLOROETHYL) ETHER	No
542-88-1	BIS(CHLOROMETHYL) ETHER	No
79-06-1	ACRYLAMIDE	No
107-13-1	2-PROPENENITRILE (ACRYLONITRILE)	No
71-55-6	1,1,1-TRICHLOROETHANE	Yes
75-34-3	1,1-DICHLOROETHANE	Yes
75-35-4	1,1-DICHLOROETHENE	Yes
75-69-4	TRICHLOROFLUOROMETHANE (CFC 11)	Yes
95-47-6	1,2-DIMETHYLBENZENE (O-XYLENE)	Yes
95-50-1	1,2-DICHLOROBENZENE	Yes
100-41-4	ETHYLBENZENE	Yes
106-42-3	1,4-DIMETHYLBENZENE (P-XYLENE)	Yes
108-38-3	1,3-DIMETHYLBENZENE (M-XYLENE)	Yes
108-88-3	METHYLBENZENE (TOLUENE)	Yes
98-82-8	CUMENE (ISOPROPYLBENZENE)	Yes

- 1 -

TS1 003546

MAR 31 '95 15:17

VIA FAX

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83/31/95 16:19:87 VIA FAX

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713 293 3385 meyers, jeff

Page 889

FROM:API-HESD WASH DC

TO:

VIA XPEDITE

MAR 31, 1995 4:08PM H640 P.09

103-65-1	n-PROPYLBENZENE	Yes
104-51-8	n-BUTYLBENZENE	Yes
127-18-4	TETRACHLOROETHENE	Yes
156-59-2	CIS-1,2-DICHLOROETHENE	Yes
156-60-5	TRANS-1,2-DICHLOROETHENE	Yes
75-00-3	CHLOROETHANE	Yes
75-71-8	DICHLORODIFLUOROMETHANE (CFC 12)	Yes
95-63-6	1,2,4-TRIMETHYLBENZENE	Yes
100-42-5	STYRENE (VINYL BENZENE)	Yes
106-46-7	1,4-DICHLOROBENZENE	Yes
1634-04-4	METHYL TERT-BUTYL ETHER (MTBE)	Yes
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (CFC 113)	Yes
87-61-6	1,2,3-TRICHLOROBENZENE	Yes
541-73-1	1,3-DICHLOROBENZENE	Yes
637-92-3	ETHYL TERT-BUTYLETHER (ETBE)	No
994-05-8	tert-PENTYL METHYL ETHER (TAME) or (tert-AMYL METHYL ETHER)	No

This page is maintained by Curtis Price <cprice@usgs.gov>;

Last modified: Wed Mar 29 12:15:45 1995

The URL for this page is

<http://sv02dsdhrn.cr.usgs.gov/nawqa/vocns/voc\_targets.html>;.

# **EXHIBIT 5**

BINGHAM McCUTCHEEN



Diana Pfeffer Martin  
Direct Phone: (213) 680-6448  
Direct Fax: (213) 680-6499  
diana.martin@bingham.com

October 17, 2005

**VIA U.S. MAIL AND LEXIS NEXIS FILE AND SERVE**

Bingham McCutchen LLP  
Suite 4400  
355 South Grand Avenue  
Los Angeles, CA  
90071-3106

213 680 6400  
213 680 6499 fax

bingham.com

Boston  
Boston  
London  
Los Angeles  
New York  
Orange County  
San Francisco  
Silicon Valley  
Tokyo  
Walnut Creek  
Washington

Robin L. Greenwald, Esq.  
Weitz & Luxenberg  
180 Maiden Lane, 17th Floor  
New York, New York 10038

**Re: MDL 1358 -- Tesoro October 2005 Response to  
Trade Organization Information**

Dear Ms. Greenwald:

Consistent with the Court's directive at the August 12, 2005 Status Conference, and in your capacity as plaintiffs' liaison counsel, this letter provides information on the Tesoro defendants' membership in major trade organizations that were involved with MTBE, ethanol, underground storage tanks, the LUST program and/or RFG issues.<sup>1</sup> The Tesoro defendants have no records of participation in any committees within these trade associations that were established specifically to address any of these topics.

Western States Petroleum Association ("WSPA"): Based on available records, Tesoro has been a member of WSPA since 1998.

National Petrochemical and Refiners Association ("NPRA"): Based on available information, Tesoro has been a member of NPRA since 1971.

Society of Independent Gasoline Marketers of America ("SIGMA"): Based on available records, Tesoro has been a member of SIGMA since 1999.

---

<sup>1</sup> Tesoro's September 12, 2005 submittal addressed its involvement with API, OFA and the MTBE Committee. Upon further records review, it appears that Tesoro has been a member of API since 1999. Tesoro also has records that reflect interactions with API between approximately 1993 and approximately 1997. Based on the available records, Tesoro cannot determine the nature of these interactions (e.g., whether they are memberships, payments for conferences or books, etc.).

Robin L. Greenwald  
October 17, 2005  
Page 2

Additionally, based on historic records that do not differentiate expenses (e.g., difference between membership and equipment purchase), Tesoro had involvement with SIGMA at some point between approximately 1992 and 1999.

National Petroleum Council ("NPC"): Based on available records, Tesoro had NPC membership between 1999 and 2003. Additionally, based on historic records that do not differentiate between expenses (e.g., differences between membership and equipment purchases), Tesoro had involvement with NPC at some point between approximately 1992 and 1999.

Brigham McCutchan LLP  
b'mghcm.com

Petroleum Equipment Suppliers Association ("PESA"): Based on available records, Tesoro had PESA membership between 1999 and 2003. Additionally, based on historic records that do not differentiate expense (e.g., difference between membership and equipment purchase), Tesoro had involvement with PESA in 1993.

Petroleum Equipment Services, Inc. ("PES"): Based on available records, Tesoro had a PES membership between approximately 2000 and 2004. Additionally, based on historic records that do not differentiate between expenses (e.g., differences between membership and equipment purchases), Tesoro had involvement with PES at some point between approximately 1992 and 1999.

Western Petroleum Marketers Association ("WPMA"): Based on available records, Tesoro has been a member of WPMA since 2000. Additionally, based on historic records that do not differentiate expenses (e.g., differences between membership and equipment purchases), Tesoro had involvement with WPMA in approximately 1993.

National Association of Convenience Stores ("NACS"): Based on available records, Tesoro had a NACS membership between approximately 2001 and 2004. Additionally, based on historic records that do not differentiate between expenses (e.g., differences between membership and equipment purchases), Tesoro had involvement with NACS at some point between approximately 1992 and 1999.

Miscellaneous: Based on records that do not differentiate expenses (e.g., difference between membership and equipment purchase), Tesoro had involvement with the following at some time between approximately 1992 and

Robin L. Greenwald  
October 17, 2005  
Page 3

1999 (specific date is unknown): American Institute of Chemical Engineers;  
American Society for Testing and Materials; Society of Petroleum Engineers; and  
Petroleum Equipment Suppliers.

Sincerely yours,

Bingham McCutchen LLP  
bingham.com

  
Diana Pfeffer Martin

cc: All counsel via Lexis Nexis File Serve



Robin L. Greenwald

October 17, 2005

• Page 4

**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of MDL 1358 -- Tesoro October 2005 Response to Trade Organization Information was served upon all parties of record via LexisNexis File & Serve on October 17, 2005.

Bingham McCurche LLP  
bingham.com

  
Angie Rigor

# **EXHIBIT 6**

1988 HEALTH AND ENVIRONMENTAL PROJECT PROPOSALS

ISSUE/TITLE: Motor Gasoline and Water Contamination  
(Groundwater) Chemical Fate of Octane Enhancers in  
Groundwater

OBJECTIVE: To determine the chemical characteristics and fate of  
BTX and ether/Alcohol solutions under in-situ experimental  
groundwater spill conditions. Specifically, plume delineation,  
octane enhancer "cosolubility" characteristics, and  
biodegradation will be investigated.

DRIVING FORCES/IMPACT: As a result of lead phase-down, octane  
enhancers such as MTBE and various alcohols are increasingly being  
used as substitutes for lead. There has recently been a dramatic  
increase in regulatory interest/concern over these  
alcohols/ethers in groundwater. Maine is considering banning the  
use of MTBE. Without field data to address the concerns of the  
regulatory community, regulatory action can be expected (probably  
within a 1-3 year time frame.)

DESCRIPTION: This project would consist of groundwater field  
studies, laboratory water quality analysis, a modest literature  
review and report preparation. Data generated would include  
characterization of plumes under water table conditions, the  
degree to which selected alcohols/ethers act as cosolvents for  
BTX compounds, and the nature of in-situ biodegradation of these  
solutions.

POSSIBLE OUTCOMES AND CONSEQUENCES: The objectives of the  
research can be accomplished, as has been well-demonstrated with  
recent Task Force research on in-situ BTX plumes. The industry  
segments most likely to benefit from the research are  
refining/marketing. If the research is not conducted, there will  
be few credible data to support industry's contention that such  
octane enhancers do not constitute a significant new groundwater  
contamination threat as constituents of gasoline.

ESTIMATED DURATION: 1-2 years

ESTIMATED BUDGET: \$125K

PRIOR COSTS: None

FUTURE COSTS: \$80K

SUBMITTED BY: Gene Mancini (ARCO)

#9:catch1

Ranked 1<sup>st</sup>

EQ-SH156 0034

EXHIBIT 30

NJDEP-MTBE-CONTENTION-000107

1998 HEALTH AND ENVIRONMENTAL PROJECT PROPOSALS

ISSUE/TITLE: Water Management/Fate, Transport, Impact of  
Gasoline Containing Oxygenates in Groundwater

OBJECTIVE: Determine the relative chemical and physical effects,  
if any, of gasoline containing oxygenates versus non-oxygenated  
gasoline.

DRIVING FORCES/IMPACT: The groundwater impact of oxygenates in  
gasoline is receiving ever increasing attention from regulators  
at both the local and national levels. The State of Maine  
currently regulates MTBE at a maximum contaminant level of 50  
ppb; and in a recent paper, recommended that MTBE be banned from  
underground storage or be contained in double wall tanks. The  
impact of MTBE is also being addressed by the state agencies and  
the EPA is considering studies on its chronic health effects.

DESCRIPTION: Oxygenates are highly soluble and mobile in water  
relative to BTX and difficult to treat using conventional  
technology. API is currently engaged in studies documenting the  
occurrence and removal of gasoline containing MTBE and evaluating  
the ability of air stripping and activated carbon to achieve low  
ppb treatment levels. Additional work is needed, initially at  
the laboratory scale, to understand the relative impact of  
oxygenates in the saturated and unsaturated zones. In  
particular, their relative impact on solubility and transport  
phenomena on gasoline constituents should be investigated.

POSSIBLE OUTCOMES AND CONSEQUENCES: Development of data  
providing a better understanding of oxygenates in groundwater  
which can be used to respond to regulatory agencies considering  
the promulgation of more stringent environmental regulations  
governing oxygenates in gasoline.

ESTIMATED DURATION: 1 year

ESTIMATED BUDGET: \$75K

PRIOR COSTS: \$130,000

FUTURE COSTS: \$50K

SUBMITTED BY: W. A. Stone (Exxon)

#2:catchI

Ranked 1<sup>st</sup>

EXHIBIT

3/

EQ-SH156 0035

NJDEP-MTBE-CONTENTION-000108

# **EXHIBIT 7**

IN THE SUPERIOR COURT FOR THE STATE OF CALIFORNIA  
IN AND FOR THE COUNTY OF MERCED

-oOo-

CITY OF MERCED,  
Plaintiff,

vs.

CHEVRON U.S.A., INC.; SHELL OIL  
COMPANY; EXXONMOBIL CORPORATION;  
EXXON CORPORATION; KINDER MORGAN  
ENERGY PARTNERS L.P.; EQUILON  
ENTERPRISES LLC; SFPP, L.P. and  
DOES 1 THROUGH 200, inclusive,

Defendants.

---

Case No. 148451

**COPY**

DEPOSITION OF BRIAN PAZIN

August 25, 2009 at 9:00 (9:08) a.m.

Before: ERIC L. JOHNSON

RPR, CSR #9771

Taken at:

Merced, California

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Deposition of Brian Pazin / August 25, 2009

1 MR. TEMKO: Bill Temko from Munger, Tolles &  
2 Olson, and I represent Shell.

3 MS. STANDIFER: Rose Standiford from Reed Smith  
4 and I represent defendants Kinder Morgan Energy Partners  
5 and SFPP.

6 MS. VANDERLAAN-SMITH: Nicole Vanderlaan-Smith  
7 from Latham & Watkins and I represent defendant  
8 ConocoPhillips Company.

9 THE VIDEOGRAPHER: Will the court reporter  
10 please swear in the witness.

11 BRIAN PAZIN,  
12 the Witness herein, having been duly and regularly sworn  
13 by the Certified Shorthand Reporter, deposed and  
14 testified as follows:

15 EXAMINATION BY MR. MILLER

16 MR. MILLER: Q. For the record, could we have  
17 your name and business address, please.

18 A. Brian David Pazin, 129 West 15th Street,  
19 Merced, California, 95340.

20 Q. By whom are you employed?

21 A. Cardgas, Incorporated.

22 Q. And when did you first go to work for them?

23 A. November of -- I believe of 1986.

24 MR. CORRELL: I believe you said you had a  
25 statement you wanted to put on the record.

Deposition of Brian Pazin / August 25, 2009

1 MR. MILLER: I was going to get to that, don't  
2 worry.

3 Q. And are you currently employed by them?

4 A. Yes, I am the owner.

5 Q. Okay. I understand that you are on some  
6 medication; is that correct?

7 A. Yes. I take blood pressure medicine and  
8 anxiety medicine.

9 Q. I don't want to get into personal details, but  
10 have you been taking your medicine for a number of  
11 years?

12 A. Approximately about two years.

13 Q. Okay. Do you believe that you can give us your  
14 best testimony this morning, despite the medication?

15 A. Yes.

16 Q. If you are having a problem at any time, for  
17 any reason, I would like you to let us know, because we  
18 want to give you a break or do whatever else may help,  
19 so that you don't have a problem that interferes with  
20 your ability to give a good deposition. Will you  
21 promise to let us know?

22 A. Yes.

23 Q. Is there anything else that you needed to put  
24 on the record before we get started this morning?

25 A. No, sir.



Deposition of Brian Pazin / August 25, 2009

1 it was in in 1986 when you started working there.

2 Are you generally familiar with the features of  
3 the station at that time?

4 A. I am sorry. I don't understand that question.

5 Q. All right. Was the underground storage tanks  
6 present in 1986 when you started working at Cardgas --  
7 were they single walled steel tanks?

8 MS. VANDERLAAN-SMITH: Lacks foundation.

9 THE WITNESS: Yes.

10 MR. MILLER: Q. And when you started in 1986,  
11 were you selling gasoline and diesel products?

12 A. Yes.

13 Q. Did you have more than one grade of gasoline?

14 A. Yes.

15 Q. Did you sell premium gasoline?

16 A. Yes.

17 Q. Throughout the entire time that you have been  
18 either employed by or owned that Cardgas facility, have  
19 they purchased all of their gasoline through Pazin Oil  
20 Company in the beginning and then Pazin & Myers, Inc.,  
21 when it was formed later?

22 A. To my knowledge, yes.

23 Q. Are you familiar with the concept of placing a  
24 containment device under a dispenser so that if gasoline  
25 is released from the plumbing or some other part, it can

Deposition of Brian Pazin / August 25, 2009

1 Did anyone give you any special training or  
2 instruction on MTBE and its potential to cause  
3 contamination, prior to the time those tanks were  
4 removed?

5 A. No.

6 Q. Did anyone talk to you about how MTBE can  
7 contaminate water supplies in wells before that time?

8 A. No.

9 Q. Did anybody talk to you about the kinds of  
10 problems that can be created if MTBE gets in a well?

11 A. No.

12 Q. Did anybody discuss with you the need to take  
13 prompt action to clean up a release if MTBE is involved,  
14 because if you don't it moves further and faster than  
15 the rest of the gasoline?

16 A. No.

17 MR. CORRELL: Objection; assumes facts not in  
18 evidence.

19 MR. MILLER: Q. Did anyone talk to you about  
20 the need to seal every crack in the pavement near your  
21 dispensers because if the customer spilled some fuel it  
22 could cause contamination problems with MTBE?

23 MR. CORRELL: Objection; assumes facts not in  
24 evidence.

25 THE WITNESS: No.

Deposition of Brian Pazin / August 25, 2009

1 Q. To the best of your recollection, did you ever  
2 observe any, you know, puddles or spills of gasoline?

3 A. No.

4 Q. Okay. And if you had, would it -- based on  
5 your operations at the business, would you have cleaned  
6 that up?

7 A. Yes.

8 MR. MILLER: Speculation.

9 MS. VANDERLAAN-SMITH: Q. Is it your  
10 understanding that if you had a leak of gasoline or  
11 there were a gasoline spill, that that would have the  
12 potential to affect the environment?

13 A. Yes.

14 Q. And that would be so, regardless of whether the  
15 gasoline had MTBE in it or not?

16 A. Correct.

17 Q. Have you heard of a material safety data sheet?

18 A. Yes.

19 Q. Okay. Those are sometimes referred to as  
20 MSDS's?

21 A. Mm-hmm.

22 Q. Do you know, during the time that you have been  
23 involved with the Cardgas station, have you ever  
24 received MSDS's?

25 A. No.

Deposition of Brian Pazin / August 25, 2009

1 Q. How is it that you became familiar with that  
2 term? How do you know what that is?

3 A. Because I also am employed by Pazin & Myers.

4 Q. Okay?

5 A. So we know about MSDS sheets through thinner or  
6 solvents, or if a customer needs an MSDS sheet for  
7 another product.

8 Q. And in conjunction with your work for Pazin &  
9 Myers, have you ever seen MSDS's?

10 A. Yes.

11 Q. Okay. And in what context would you generally  
12 receive those?

13 A. I don't know -- can you repeat that?

14 Q. I guess you had said that you seen the MSDS's?

15 A. I have seen the sheets.

16 Q. Just seen the sheets?

17 A. Yeah.

18 Q. Why would you come to see those? Would someone  
19 hand them to you or would you --

20 A. Maybe the secretary would say, "Would you  
21 deliver this to a customer? They want this MSDS sheet."  
22 I would take it to whatever customer.

23 Q. Okay. What was your role with Pazin & Myers?

24 A. I can just basically, you know, drive a route  
25 truck, or if somebody comes in and wants some oil, it is

Deposition of Brian Pazin / August 25, 2009

1 kind of a dual thing for me. It is our name on the gate  
2 so, I mean, I am, you know, employed there. I have a  
3 class B license, so in case I need to get on the truck  
4 and deliver fuel, I can do that.

5 Q. Okay. And I guess -- do you know if -- let me  
6 think about how to phrase this.

7 So on occasion the secretary would ask you to  
8 deliver an MSDS to a customer. Correct?

9 A. Yeah.

10 Q. And she never asked you to deliver one to  
11 yourself as owner of the Cardgas?

12 A. No.

13 Q. Because that would be kind of silly, right?

14 A. Right.

15 MS. VANDERLAAN-SMITH: All right. Those are  
16 all the questions that I have. Thank you.

17 THE WITNESS: Thank you.

18 MS. STANDIFER: Do you have any?

19 MS. JONES-ROY: I don't have any.

20 EXAMINATION BY MS. STANDIFER

21 MS. STANDIFER: All right.

22 Q. Good afternoon, Mr. Pazin. Rose Standifer. I  
23 represent Kinder Morgan and SFPP.

24 So first, have you ever heard of Kinder Morgan?

25 A. Yes.

Deposition of Brian Pazin / August 25, 2009

1 STATE OF CALIFORNIA )  
2 COUNTY OF STANISLAUS ) ss.

3 I, ERIC L. JOHNSON, do hereby certify that I am a  
4 licensed Certified Shorthand Reporter, duly qualified  
5 and certified as such by the State of California;

6 That prior to being examined, the witness named in  
7 the foregoing deposition was by me duly sworn to testify  
8 to tell the truth, the whole truth, and nothing but the  
9 truth;

10 That the said deposition was by me recorded  
11 stenographically at the time and place herein mentioned;  
12 and the foregoing pages constitute a full, true,  
13 complete and correct record of the testimony given by  
14 the said witness;

15 That I am a disinterested person, not being in any  
16 way interested in the outcome of said action, or  
17 connected with, nor related to any of the parties in  
18 said action, or to their respective counsel, in any  
19 manner whatsoever.

20


21 DATED: September 4, 2009

22

23

24

25

  
Eric L. Johnson, CSR, RPR

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# **EXHIBIT 8**

American Petroleum Institute  
1220 L Street, Northwest  
Washington, D.C. 20005  
202-682-8000



David H. Chen, Ph.D.  
Sr. Environmental Scientist  
(202) 682-3343

Date: February 16, 1988

From: David H. Chen

To: GROUNDWATER TECHNICAL TASK FORCE (GWTTF)

Subject: 1989 Groundwater Research Proposals

Attached please find the six individual project writeups in the rank order proposed for the 1989 research program following our discussion at the January GWTTF meeting. For clarity and consistency, some modifications were made to each of the original project writeups as submitted by the authors. The present versions are included in the 1989 Wastes Research Program to be reviewed by the Environmental Technology Research Group this week.

Because of the heavy demands placed on the 1989 research funds, and the competitiveness of the individual submittals in the wastes program overall, it will be difficult to predict how each of the groundwater research projects will fare. Needless to say adjustments will have to be made to accommodate various needs identified.

Attachments

cc: J. Shaw (memo only)  
D. Persons

An equal opportunity employer

EXHIBIT

17

EQ-SH156 0510

NJDEP-MTBE-CONTENTION-000071



## 1989 HEALTH AND ENVIRONMENTAL PROJECT PROPOSALS

ISSUE/TITLE: Waste Management/Impact Of Gasoline-Containing Oxygenates On Groundwater Contamination ☒

OBJECTIVE: A two-year program to investigate the fate and transport characteristics of gasoline-oxygenate blend in groundwater. The study will assess the validity of claims that spills of these blends cause an increased solubility of BTEX hydrocarbons in groundwater, resulting in their moving faster and further than in the absence of oxygenates. This is a 2nd-year continuation of a 1988 project (GW-16).

DRIVING FORCES/IMPACT: The impact of oxygenates (e.g., methyl tertiary butyl ether (MTBE), ethanol, and methanol) on gasoline/groundwater interactions is receiving increasing regulatory attention at state and federal levels. In a paper by State of Maine officials which received nationwide publicity, the officials called for either banning of oxygenated gasolines or stricter requirements that they be stored in double-walled tanks. The claims were that the oxygenates increase the dissolved hydrocarbon plume (BTEX and oxygenates), and it travels much faster than a plume without oxygenate. At present, industry has no scientific data to refute these claims. With recent interest in use of alcohol blends to reduce air pollution, it is even more imperative that the fate and transport of oxygenate plumes be legitimately documented.

DESCRIPTION: The 1988 project includes complementary laboratory and in-situ field studies designed to determine the impact of gasoline-oxygenate blends to groundwater. The effects of oxygenates on the solubility of BTEX constituents in groundwater will be measured in the laboratory (Phase I). In mid-1988, field injections of one or two gasoline-oxygenate blends (e.g., MTBE and methanol) will be conducted to assess plume behavior and mobility under water table conditions (Phase II). An injection of reference, non-oxygenated gasoline will also be done. The fate and transport of BTEX and oxygenates will be monitored through the Fall of 1989. In order to complete the 2nd year of study monitoring the plumes and comparing the oxygenate plumes to the reference plume, 1989 funds are requested.

POSSIBLE OUTCOME & CONSEQUENCES: This study will provide industry with timely information to respond to regulatory initiatives (Phase I report due Jan. 89, Phase II report due Feb. 90). There is a downside risk that the results may show that oxygenates, to some extent, increase groundwater contamination problems from gasoline leaks and spills. In this event, industry will be knowledgeable about the range of impacts to expect from gasoline-oxygenate blends, better equipped to formulate strategies for cleanup, and in a stronger proactive rather than reactive position.

ESTIMATED DURATION: 1 year

ESTIMATED BUDGET: \$140,000

PRIOR COSTS: \$100,000

FUTURE COSTS: Unknown

SUBMITTED BY: Dorothy Keech  
Groundwater Technical Task Force

ANSWER: DC2/P-6

EQ-SH156 0511

NJDEP-MTBE-CONTENTION-000072

# **EXHIBIT 9**

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

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**In re: Methyl Tertiary Butyl Ether ("MTBE")  
Products Liability Litigation**

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**This Document Relates To:**

*City of Merced Redevelopment Agency, et al. v. Exxon  
Mobil Corp., et al.*, 1:08-cv-06306

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**CITY OF MERCED REDEVELOPMENT AGENCY  
and MERCED DESIGNATED LOCAL AUTHORITY,  
AS SUCCESSOR AGENCY TO THE  
REDEVELOPMENT AGENCY OF THE CITY OF  
MERCED,**

**Plaintiffs,**

**v.**

**EXXON MOBIL CORPORATION; EXXON  
CORPORATION; CHEVRON U.S.A. INC.; SHELL  
OIL COMPANY; EQUILON ENTERPRISES LLC;  
TESORO CORPORATION; TESORO REFINING  
AND MARKETING COMPANY; and DOES 1  
THROUGH 200, inclusive,**

**Defendants.**

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**Master File No. 1:00-1898  
MDL 1358 (SAS)  
M21-88**

Hon. Shira A. Scheindlin

Transferred from:  
United States District Court,  
Eastern District of California  
Case No. 1:08-cv-00714

Removed from:  
Superior Court of California,  
County of Merced  
Case No. 151145

**FIRST AMENDED COMPLAINT  
FOR DAMAGES AND OTHER  
RELIEF FOR:**

**(1) COST RECOVERY UNDER  
THE POLANCO  
REDEVELOPMENT ACT;  
(2) PRODUCTS LIABILITY;  
(3) NEGLIGENCE;  
(4) TRESPASS; AND  
(5) NUISANCE**

**JURY TRIAL DEMANDED**

public drinking water because of MTBE's threat to public health.

19. TBA also presents a significant threat to public health. The State of California has set an action level for TBA of 12 ppb in water, based on an interim assessment performed by the California Office of Environmental Health Hazard Assessment. The interim assessment concluded that exposure to TBA at levels above 12 ppb in water creates an unacceptable public health risk of cancer.

20. California Governor Gray Davis ordered state agencies to phase out MTBE use in motor fuel in California, and to achieve 100% removal no later than December 31, 2003. Eighteen states, including California, have either banned or are phasing out the use of MTBE in gasoline.

**C. Defendants' Promotion of MTBE and TBA.**

21. The Defendants promoted the use of gasoline containing MTBE and/or TBA by claiming that it was environmentally beneficial and would improve air quality. At the same time, Defendants concealed and/or failed to disclose that MTBE would contaminate groundwater and render it not potable.

22. The widespread problems of leaking gasoline delivery systems were well known to the Defendants prior to the introduction of MTBE and TBA. At least as early as the mid-1960's these Defendants knew, or reasonably should have known, that gasoline delivery systems frequently leak and release gasoline into the environment, including into groundwater.

23. Despite knowing that a substantial percentage of Merced gasoline stations would utilize gasoline storage and distribution facilities which were inadequate and leaking, and

without taking reasonable, appropriate, or special measures to monitor, detect, and respond to releases of MTBE and/or TBA to soil and/or groundwater, and without taking reasonable, appropriate, or special precautions to investigate, contain, and cleanup releases of these compounds, and despite the availability of reasonable alternatives (including adequate warnings), Defendants chose not to warn customers, retailers, environmental consultants, regulators, or public officials, including Plaintiffs. At all times, Defendants represented to purchasers of MTBE, TBA, and/or gasoline containing MTBE and/or TBA, as well as to the public and government agencies, that such products were environmentally sound and appropriate for distribution, sale, and use. Indeed, Defendants represented that gasoline containing MTBE could be handled the same as ordinary gasoline, and required no special measures to protect against or respond to suspected releases to the subsurface.

24. The Defendants further exacerbated the situation by, among other things, negligently, carelessly, recklessly, and/or intentionally failing to: (1) prevent leaks of MTBE and/or TBA through the use of appropriate technology; (2) install and maintain gasoline delivery systems that prevent leaks and facilitate prompt detection and containment of any leaks; (3) monitor and discover leaks as soon as possible; (4) warn those who may be injured as a result of the leak(s); and (5) clean up and abate MTBE and/or TBA spill(s) as thoroughly and as soon as reasonably possible and in a manner necessary to prevent harm and injury.

25. Plaintiffs are informed the Defendants exercised control over use of gasoline containing MTBE and/or TBA through a variety of means, including written agreements, inspection rights, prescribing certain procedures and operating practices, training, sale of branded

goods, and agreements obligating the users of MTBE and/or TBA to acquire, store, and sell gasoline containing MTBE and/or TBA. Therefore, the Defendants had actual control over leaking gasoline delivery systems and/or were vicariously liable for the acts, omissions, and conduct of the owners and operators of Merced gasoline stations and pipelines which released MTBE into the environment.

26. The Defendants further advised consultants who conduct environmental investigations and cleanups that gasoline with MTBE could be remediated using the same practices and procedures used for conventional gasoline.

27. Gasoline containing MTBE and/or TBA was released from gasoline delivery systems in Merced until at least 1997 from gasoline retail stations and, Plaintiffs are informed, a pipeline operated by Kinder Morgan and SFPP. Over time, MTBE and TBA migrated down to groundwater and, after several years elapsed, traveled to the project area causing pollution, contamination, and interference with the Plaintiffs' project area. This appreciable injury and damage occurred for the first time in July 2006, when the Regional Water Quality Control Board determined that the parties responsible for releases at 1415 "R" Street and 1455 "R" Street in Merced were not taking appropriate and timely action to abate the plume, and the Plaintiffs were asked to manage the project.

28. The Plaintiffs seek compensatory damages needed to investigate, remediate, and remove gasoline, hydrocarbons, MTBE and/or TBA contamination, and for past, present, and future remediation, and/or investigation costs incurred in or after August 2006.

52. For the reasons alleged herein, Plaintiffs are entitled to an award of exemplary damages against defendants Chevron, Shell, Exxon Mobil, Exxon, Equilon, and DOES 1 through 50. After the completion of additional investigation and discovery, Plaintiffs may seek leave of court to amend this complaint to allege a claim for exemplary damages against additional defendants if warranted by the facts.

**FOURTH CAUSE OF ACTION**

**(Trespass Against All Defendants)**

53. Plaintiffs refer to paragraphs 1 through 52 above, and by this reference incorporate them into this cause of action as though fully set forth herein.

54. Plaintiffs are the owner and/or actual possessor of property rights and interests. Defendants, their agents and employees, knew, or in the exercise of reasonable care should have known, that MTBE and TBA and gasoline containing MTBE and/or TBA are extremely hazardous to groundwater and to public water systems, including the property and other rights of the Plaintiffs.

55. The Defendants so negligently, recklessly, and/or intentionally released, spilled, and/or failed to properly control, handle, store, contain, and use gasoline containing MTBE and/or TBA, and/or failed to clean up spills and leaks of gasoline containing MTBE and/or TBA, that they directly and proximately caused MTBE and/or TBA to contaminate Plaintiffs' project area as follows:

- (a) The Defendants participated in the use, storage, and release of gasoline containing MTBE and/or TBA by owning, controlling, regulating, constructing, installing,

operating, monitoring, inspecting, and testing, or by failing to do so, the gasoline delivery systems and thereby proximately caused gasoline containing MTBE and/or TBA to be released into the environment and groundwater.

- (b) The Defendants negligently provided instructions and/or warnings to their customers and others concerning MTBE and/or TBA, knowing that there was a substantial danger that if their instructions and/or warnings were followed that gasoline containing MTBE and/or TBA dispensed into gasoline delivery systems would escape into the environment and contaminate groundwater and would not be appropriately remediated.
- (c) The Defendants negligently delivered (directly or indirectly) gasoline containing MTBE and/or TBA into gasoline delivery systems which they knew, or should have known, were inadequate, old, leaking, and/or defective, and thereby created a substantial known danger that MTBE and TBA would be released into the environment and contaminate groundwater; and negligently provided instructions and/or warnings to their customers and others concerning MTBE and TBA, knowing that there was a substantial danger that if their instructions and/or warnings were followed that gasoline containing MTBE and/or TBA dispensed into gasoline delivery systems would escape into the environment and contaminate groundwater.
- (d) Defendants retained consultants and negligently controlled and/or directed their cleanup and remediation activities (or the lack thereof) at gasoline station sites,



thereby causing and permitting MTBE and/or TBA to contaminate and threaten Plaintiffs' project area, and Defendants failed to warn the appropriate entities and individuals, including Plaintiffs, of known risks, spills, releases, and/or leaks, and/or failed to undertake reasonable, appropriate, or necessary action to reduce, remediate, or abate MTBE and/or TBA groundwater contamination.

- (e) Defendants and their agents negligently overfilled gasoline delivery systems with gasoline containing MTBE and/or TBA, and/or spilled or released it at gasoline facilities near Plaintiffs' project area.
- (f) When Defendants learned, or reasonably should have learned, that MTBE and/or TBA were persistent, significant, and/or widespread sources of groundwater contamination, or threatened to be so, Defendants failed to warn the appropriate entities and individuals, including Plaintiffs, of known risks, spills, releases, and/or leaks, and/or failed to undertake reasonable, appropriate, or necessary action to reduce, remediate, or abate MTBE and/or TBA groundwater contamination.

56. Defendants had actual control over Merced gasoline stations through a variety of means, including, but not limited to, written agreements, inspection rights, prescribing certain procedures and operating practices, sale of branded goods, agreements obligating the respective owners and/or operators to acquire, store, and sell gasoline containing MTBE and/or TBA, and training. Therefore, Defendants had actual control over the Merced gasoline stations with leaking gasoline delivery systems and/or were vicariously liable for the acts and conduct of the

owners and operators of those stations.

57. The MTBE and TBA contamination of Plaintiffs' project area has varied and will vary over time and requires investigation, remediation, abatement, and/or treatment. The Plaintiffs have engaged, or will engage, in remediation, abatement, investigation, and/or treatment programs, and thereby have sustained, are sustaining, and will sustain, the damages alleged herein.

58. For the reasons alleged herein, Plaintiffs are entitled to an award of exemplary damages against defendants Chevron, Shell, Exxon Mobil, Exxon, Equilon, and DOES 1 through 50. After the completion of additional investigation and discovery, Plaintiffs may seek leave of court to amend this complaint to allege a claim for exemplary damages against additional defendants if warranted by the facts.

#### **FIFTH CAUSE OF ACTION**

##### **(Nuisance Against All Defendants)**

59. Plaintiffs refer to paragraphs 1 through 58 above, and by this reference incorporate them into this cause of action as though fully set forth herein.

60. The negligent, reckless, intentional, and ultrahazardous activity of Defendants, and each of them, as alleged herein, has resulted in the contamination and pollution of and threats to Plaintiffs' project area and thereby constitutes a nuisance. The contamination, pollution, and threats to Plaintiffs' project area from gasoline containing MTBE and/or TBA is a public nuisance as defined in Civil Code section 3479, Civil Code section 3480, Health and Safety Code section 5410, and Water Code section 13050, as it is injurious to health, indecent, and offensive

to the senses and has substantially interfered with and obstructed Plaintiffs' project area and property rights.

61. The Defendants' negligent failure to warn that:

- (a) MTBE and TBA are more soluble, mobile, and persistent than other components of conventional gasoline and, therefore, have a unique and greater potential to contaminate groundwater and drinking water supplies;
- (b) special precautions should be taken to prevent, contain, limit, detect, and cleanup releases of gasoline containing MTBE and TBA;
- (c) gasoline delivery systems should be upgraded and improved to prevent releases of gasoline containing MTBE;
- (d) any release of MTBE and TBA must be detected and remediated as soon as possible to avoid contamination of wells and drinking water;
- (e) handling gasoline containing MTBE and TBA in the same manner as conventional gasoline can cause environmental contamination which is difficult and expensive to cleanup; and
- (f) even small spills of gasoline containing MTBE (including a cup spilled on the pavement by the customer) can cause environmental contamination if it is not promptly cleaned up;

was a substantial factor in the creation of the nuisance.

62. Plaintiffs own and hold property rights and interests damaged by the nuisance.

Plaintiffs' injury is separate and distinct from that of the public.

63. Plaintiffs have not consented to and do not consent to this nuisance. Defendants, and each of them, knew, or should have known, that Plaintiffs would not consent to this nuisance.

64. As a direct and proximate result of the nuisance, Plaintiffs have been damaged and are entitled to the compensatory and exemplary damages alleged herein, or to such other appropriate relief as Plaintiffs may elect at trial, including, but not limited to, equitable relief in the form of an order requiring the Defendants to abate the nuisance injuring Plaintiffs and the project area.

**PRAYER**

**WHEREFORE**, Plaintiffs request judgment against Defendants, and each of them, for:

1. Compensatory damages according to proof;
2. Exemplary damages in an amount sufficient to punish defendants Chevron, Shell, Exxon Mobil, Exxon, Equilon, and DOES 1 through 50, inclusive, and to deter those defendants from ever committing the same or similar acts;
3. An Order declaring that the Defendants have created a nuisance, and compelling Defendants to abate that nuisance;
4. Pursuant to Civil Code section 1882.2, three times the amount of actual damages, plus the cost of the suit and reasonable attorneys' fees;
5. Reasonable attorneys' fees, pursuant to Code of Civil Procedure section 1021.5 or otherwise, and costs incurred in prosecuting this action, and prejudgment interest to the full extent permitted by law; and
6. Such and other further relief as the court may deem just and proper.

# **EXHIBIT 10**

40-86130-23

Dya(1)

## Minutes for the Public Focus Meeting

For Methyl tert-Butyl Ether (MTBE)

December 17, 1986

The meeting opened with comments from Rich Troast, Section Chief in the Test Rules Development Branch. Beth Anderson, project manager for MTBE, presented the handout information (attached) which outlined the concerns and testing recommended by the Interagency Testing Committee (ITC) Report 51 FR 41417 (November 14, 1986). She indicated the data gaps in: health effects, exposure, and production data and requested industry submission of this information. An additional concern brought out by TRDB research was the contamination of ground water supplies by MTBE. There are over 700,000 underground storage tanks for petroleum products in the US and about 30% of these tanks leak.

Vinay Kumar, Chemical Engineering Branch, submitted a list of questions and requested industry response. Ed Coe, Economics Branch, presented a list of questions for industry response. He estimated the ITC testing costs (\$500,000 to \$800,000) and the annualized test cost per pound as a percentage of product price per pound: 0.009% to 0.018%.

William Kilmartin, from ARCO Chemical Company, presented data to answer the ITC's concerns with two major points: 1) Monitoring of exposure to MTBE from gasoline vapors is needed. The worse case exposures can be calculated from existing data. 2) Testing for chronic inhalation health effects is not necessary because worse case exposures to MTBE are well below the no observable adverse effect level.

Arthur Lington, EXXON Corporation, presented a summary of health effects testing of MTBE already conducted. His review of MTBE data concluded that there was no need to conduct a chronic study to assess oncogenic, hematologic or neurotoxic effects based on data from experiments with MTBE, other aliphatic ethers and tert-butyl alcohol. The presentation concluded by suggesting that TLV of 100 ppm MTBE would allow a margin of safety of 100 or greater because exposure to MTBE vapor is generally <1 ppm.

The industry representatives were encouraged to submit supplemental information and the mandatory 8(a) and 8(d) information for the Agency's course setting process. Rich Troast indicated that a public course setting meeting would be held in April. Then the meeting was adjourned.

Attachments

EXHIBIT 28

Schedule

<u>Week</u>	<u>Event</u>
1-2	Receive ITC report recommendation Publish ITC report, 3(a) & 3(d) notices, and invitation for public participation in negotiations
3-6	Comment period on ITC report
7-14	Public focus meeting
15-20	3(a) and 3(d) reporting period
22	Course-setting Public meeting on course-setting decision and deadline for requests to participate in negotiations
22-30	Negotiations
32	KPA decision point: consent agreement or test rule

<u>Week</u>	<u>Consent Agreement</u>	<u>Week</u>	<u>Test Rule</u>
34-36	Prepare consent agree- ment; circulate to parties	32-40	Rule preparation, agency review and sign-off
36-40	Comments due on consent agreement	62	Publish proposed rule in <u>FEDERAL REGISTER</u>
42	Comment resolution meeting if necessary	70-108	Agency reviews com- ments; preparation of final rule or no-test decision, agency review and sign-off
42-44	Prepare final consent agreement and <u>FEDERAL</u> <u>REGISTER</u> notice	108	Publish final rule or no-test decision in <u>FEDERAL REGISTER</u>
44-48	Sign-off consent agreement and <u>FEDERAL REGISTER</u> notice		
50	Publish <u>FEDERAL REGISTER</u> notice		

MEETINGS, TEST-BUFFET  
 DECEMBER 17, 1986 FREE FOCUS MEETING  
 10 A.M.

Name ART LINGTON  
 Company Affiliation EXXON CORPORATION  
 Address P.O. BOX 225 E. HILLSTOWN NJ 08977  
 Phone Number 201-993-1011

Name JAMES DEJONNE  
 Company Affiliation ARCO Chemical  
 Address 1500 IMPACT ST Philadelphia Pa 19102  
 Phone Number 215-557-7604

Name P. J. Amicare  
 Company Affiliation RPA  
 Address 1330 CT. AVE WASH DC 20006  
 Phone Number 202-675-0060

Name Ken Sternberg / Lori Weinberg  
 Company Affiliation Alcohol Week  
 Address 1234 Davis Highway Arlington, VA 22203  
 Phone Number 702-35116

Name George Vears  
 Company Affiliation UACCO Chemical  
 Address 1500 MARKET ST. Phila Pa 19101  
 Phone Number (215) 537-2253

Name Vinay Kumar  
 Company Affiliation RPA  
 Address WASH DC 20460  
 Phone Number 202-382-3241

Name John DeLong  
 Company Affiliation TEXACO INC  
 Address PO Box 5000 Beaumont TX 77705  
 Phone Number 409-831-3400 X6311



Name WILLIAM T KILMARTIN  
 Company Affiliation ARCO CHEMICAL CO  
 Address 1500 MARKET ST PHILA PA 19102  
 Phone Number 215-557-3560

Name S.A. RIDGON  
 Company Affiliation ARCO Chem. Co  
 Address 3501 Univ Chemo. Bldg Harrison Tn. MO 646  
 Phone Number (202) 359-1017

Name Touma K1a  
 Company Affiliation TRAB  
 Address 401 M CHOW  
 Phone Number UTC-P120

Name Ed Mc  
 Company Affiliation EPA OTS/ETD/PIR  
 Address TR-339  
 Phone Number 382-3314

Name Michael C. Gierke  
 Company Affiliation EPA OTS/HERO/TEB  
 Address TS-705  
 Phone Number 387-7451

Name DANIEL TALMA  
 Company Affiliation AROLD CORP  
 Address 200 E. RANDOLPH CHICAGO IL 60601  
 Phone Number 312-856-5772

Name D. A. GRAY  
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Name Bob Dink  
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 Phone Number 702 ERT-1129 WASH DC 22037

Name L.L. Spurluck  
 Company Affiliation CMA  
 Address 2501 M St NW WDC 20072  
 Phone Number 202-282-1172

Name Marie Kortum  
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 Address FAIRCHILD EN-397E  
 Phone Number 475-9841

Name Robert Fensterman  
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 Address 1201 L St NW WASH DC 20001  
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 Address 401 M Street SW  
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 Company Affiliation  
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 Phone Number

# **EXHIBIT 11**

Job File 37001

# Memorandum

San Francisco  
February 13, 1987

MR. D. B. SMITH:

As per your request, we have reviewed the available health data, environmental consequence and likely regulatory action relative to MIBE (tert-butyl-methyl ether) and offer the following assessment.

## Toxicology

In November, the Interagency Testing Committee (ITC) listed MTBE in their 19th annual report to the EPA. Prior to that action, CRCS, Inc. had prepared an information review document which served as the basis for the ITC decision. A copy of the report is enclosed.

Most of the toxicology testing on MTBE has been sponsored by the American Petroleum Institute. In inhalation teratology and reproduction studies in rats and mice, no exposure-related adverse effects were observed. In a 90-day inhalation exposure to rats, the no-effect-level was 250 ppm. The principal pharmacotoxic sign was a dose-related anesthetic effect on the central nervous system. Other studies showed MTBE to be a slight skin and eye irritant and have low acute dermal and oral toxicity. We believe the acute toxicity data and 90-day inhalation study are sufficient to prepare safe handling procedures and exposure levels for workers.

The mutagenicity data on MTBE was equivocal. While the Ames test was negative, other short-term genotoxicity assays were positive under certain conditions. A lifetime cancer bioassay has not been done with MTBE. Because the ITC concluded the exposure potential to MTBE was high, any test rule is likely to require additional testing in these areas.

### Occupational Health

Occupational health concerns do not impose a problem to the manufacturing of MTBE over normal refinery operations.

TLVs exist for methanol but not for isobutylene (a second reactant) and MTBE. While monitoring of employee exposure can be accomplished, the Chevron Exposure Standards Committee would have to establish standards for isobutylene and MTBE. Detailed studies may be required before it is possible to accurately measure employee exposure on a routine basis, and the methods will require validation.

In the event of fire, all the materials, feed stock, intermediates, and process chemicals degrade to carbon monoxide, carbon dioxide and water and are not reported to form toxic combustion products. The control of occupational exposures in normal and emergency situations is similar to what is being done now in refinery operations.

**EXHIBIT 13**

Mr. C. B. Smith

- 2 -

February 12, 1987

Environmental

Because of the perceived health effects, local and state regulatory agencies are concerned with the clean-up of ground water containing MTBE. Clean-up levels vary from state to state, and in some cases, between localities within a state.

Two considerations impact MTBE. One is the potential health risk, and the second is the increased solubility over normally regulated constituents of interest, i.e., benzene, toluene and xylene (BTX). *any more?*

MTBE is significantly more soluble in water than BTX. Consequently, the dissolved "halo" from a leak containing MTBE can be expected to extend farther and spread faster than a gasoline leak that does not include MTBE as one of the constituents.

Further compounding the problem of increased solubility, MTBE is more difficult to remove from ground water using current technology (air stripping or carbon adsorption). Because of its lower volatility, MTBE requires more than double the air stripping capacity to reach a 95 percent reduction. Removal using carbon adsorption is even worse. MTBE breaks through activated carbon four times faster than BTX.

Clean-up of a gasoline leak/spill containing MTBE can be expected to initially cost more in capital and O&M than a conventional gasoline leak/spill. There are insufficient data available to determine the time required to clean up dissolved MTBE from ground water. Logically one could conclude the MTBE would not be as tightly bound to soil particles, thus could be more easily leached from the subsurface soil particles. However, due to the increased solubility, the MTBE will be dissolved into a much larger portion of the aquifer, thus offsetting a possible reduced vadose zone contamination.

Regulatory

*unestimated portion of subsurface above water table*

The Environmental Protection Agency (EPA) has until April, 1987, to propose a test rule for MTBE under Section 4 of TSCA. While EPA does not have to issue a test rule if they determine that current information is sufficient, this is not expected to happen. In April, the EPA is expected to outline their major concerns about MTBE and issue the required testing and monitoring needed to address those concerns.

Industry representatives from Arco, Exxon, Sun Oil and Texaco met with EPA in December, 1986 at a "focus meeting" to discuss MTBE. Arco's representative felt the EPA's major concern was the potential for ground water contamination. Their secondary concerns were the lack of animal lifetime bioassay data and consumer exposure data. Manufacturers of MTBE are attempting to establish an industry group to "negotiate" the test rule with EPA. This will probably be done through the Specialty Organic Chemicals Manufacturers Association (SOCMA).

Chevron has experience in three states involving clean-up of ground water containing MTBE (Florida, Maryland and Texas). While all states were concerned about the MTBE, none showed any increased concern due to mobility, solubility, toxicity, or difficulty of clean-up. The possible move to restrict the use of MTBE

Mr. D. B. Smith

- 3 -

February 13, 1997

In Maine appears to be an isolated action and not a trend. However, this could change if other states perceive the threat to ground water to be great or if Maine becomes exceptionally vocal (see Enclosure 2). Considering solubility, toxicity, difficulty of detection (taste) and degree of treatment, methanol as an additive should be of greater concern than MTBE. However, several states apparently do not share those concerns about methanol.

Overseas, the European Economic Community (EEC) is concerned about all oxygenated fuel additives (i.e., methanol, ethanol, MTBE) and is considering a data call-in on these materials. Manufacturers and users would have to develop and submit the required data. We have asked Chevron Central Laboratories to monitor their actions and inform us of new developments.

If you have any additional questions please contact either Mr. Russ White (CTN 666-6027) or Mr. Jack Fraim (CTN 894-6735).

  
R. L. ABBOTT

JWF:jdr  
Enclosures

cc w/o encl:	Mr. C. L. Blackwell	Mr. H. S. Quilley
	Mr. O. T. Buffalaw	Mr. E. E. Spittler
	Mr. O. W. Callahan	Mr. R. W. Vase
	Mr. R. D. Cavalli	Mr. S. L. Dryden
	Mr. W. J. Mulligan	

# **EXHIBIT 12**



TO: Bob Drew

FROM: Judy Shaw

DATE: Jan. 8, 1987

RE: Potential Issue for API--Methyl Tertiary Butyl Ether in Gasoline

During the API/NWWA groundwater Conference held Nov. 12-14 in Houston, a paper was presented by personnel from the Maine Dept. of Environmental Protection discussing groundwater contamination problems resulting from MTBE in gasoline leaks and spills. Of most concern is the paper's conclusion that 1) MTBE be banned from gasoline stored underground or 2) gasoline containing MTBE be stored in double contained facilities. This paper received considerable publicity at the conference and was picked up and reported in the Dec. 8 issue of Alcohol Week. In addition, it was sent out to the UST Work Group of the New England Interstate Water Pollution Control Commission which also includes EPA personnel.

Recently, representatives of ARCO Chemical (Bill Kilmartin, George Yogis ) contacted Dave Ruhala and Joe Pattok of API expressing their concern and requesting API rebuttal. As a result Dave R. Joe and Rudy White met with Dave Chen to discuss the issue. Subsequently, Dave sent a copy of the paper to selected members of the Groundwater task force for review. (NWWA will publish the proceedings of the conference and we have an opportunity to comment and request changes in the paper.) A draft of the API comment on the paper is attached along with the original paper and the Alcohol Week review. The API comments were prepared by Gene Mancini of ARCO, subsequent to a conference call with task force members. (Gene is a member of the task force but not involved with ARCO Chemical.) The draft is now being circulated to the task force members for comment. When final, it will be sent to Jay Lahr, the president of NWWA and the person responsible for preparing the proceedings.

In addition, Dave Chen tells me that Walter Retzsch has been asked by Ron Jones to develop information on the current production of MTBE and its extent of use in gasoline. Lastly, Bob Fensterheim states in his Dec. 30 memo that EPA is considering TSCA reporting requirements for MTBE.

Since a number of API folks seem to now be involved in the issue, I suggest you bring it to Bill's attention. Perhaps a meeting should be scheduled to decide what should be API's role (if any) on this issue and who should be the players. Our only other involvement with MTBE here in HESD at the moment is a research project which has just got underway to look at treatment technology efficiency and optimization for removing MTBE from contaminated groundwater.

EXHIBIT, 29

EQ 038173

NJDEP-MTBE-CONTENTION-000106

American Petroleum Institute  
1220 L Street, Northwest  
Washington, D.C. 20005  
202-682-8000



David H. Chen, Ph.D.  
Sr. Environmental Scientist  
(202) 682-8343

January 23, 1987

Dr. Jay Lehr  
National Water Well Association  
6375 Riverside Drive  
Dublin, OH 43017

Dear Dr. Lehr:

This letter has been written in order to provide comments to the National Water Well Association regarding a manuscript submitted for proceedings publication entitled "Methyl tertiary Butyl Ether as a Ground Water Contaminant" written by Garrett, Moreau and Lowry. The comments presented here represent the consensus opinions of members of the Groundwater Technical Task Force of the American Petroleum Institute.

While specific and individual comments are indicated on a copy of the manuscript enclosed with this letter, several generalized but major comments and concerns are provided below for your consideration in reviewing the paper:

\*The tone and presentation of the paper detracts from what should be an objective and dispassionate discussion of the technical data provided by the authors. Phraseology such as "name of the game" and "chalk it up as" is unusual, and other familiar, almost conversational sentence structure, confers an informality which is unwarranted in a technical publication.

\*The authors have reviewed publicly available toxicological data as well as industry monitoring data and have concluded that MTBE is "not very toxic" but seems to be an irritant at high doses. Nevertheless, they imply in other sections of the paper that MTBE is highly toxic in contradiction to their own cursory analysis of the available data.

\*Both in the Abstract and in the body of the text the authors introduce and promote the hypothesis that MTBE acts as a cosolvent. The somewhat confusing discussions imply that increased concentrations of BTX compounds will be found in both MTBE plumes and contaminated groundwater. Such cosolubility theories were once proposed for benzene as a plume cosolvent for ethylbenzene, toluene and other aromatics, but were subsequently demonstrated to be incorrect. The authors provide no substantive data to support such a cosolubility theory.

An equal opportunity employer

**EXHIBIT**

EQ 038177

56-9941

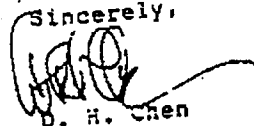
NJDEP-MTBE-CONTENTION-000050

The authors conclude the MTBE-contaminated groundwater is difficult to treat yet, in an unnecessarily commercial reference to Lowry Engineering, they conclude that this point-of-use technology is cost-effective. While reference to the technology may be appropriate, the rather strong commercial message is not.

The authors' "recommendations" that MTBE, and several other octane enhancers developed to replace lead, be either banned as gasoline additives or required double-lined storage tanks is clearly a policy statement and not an objective, credible scientific conclusion. Furthermore, data presented in this paper as well as those generated by ongoing API research indicate that such a policy is reactionary, unwarranted and counterproductive.

Please do not hesitate to contact me if you have any questions regarding these comments.

Sincerely,



D. H. Chen

Enclosure

cc: J. Shaw  
B. Graves

EQ 038178

NJDEP-MTBE-CONTENTION-000051

# **EXHIBIT 13**

ARCO Chemical Company

110-5113008



February 12, 1987

Ms. Beth Anderson  
TS-7718, Room 100, NE Mall  
Test Rules Development Branch  
Environmental Protection Agency  
401 M Street, S.W.  
Washington, DC 20460

VIA FEDERAL EXPRESS

Dear Ms. Anderson:

In response to your questions on "Data Gaps" (Attachment 1) that were presented at the December 17, 1986 Focus Meeting on Methyl-Tertiary Butyl Ether (MTBE), ARCO Chemical Company submits the following comments:

Item A - Additional studies relevant to health effects of MTBE will be addressed in our Section 8(a), 9(d) submittal.

Item B - The number of workers exposed to MTBE will be included in our Section 8(a) submittal. We have no information on number of consumers exposed. However, as we have indicated in our submittal to the ITC, MTBE is estimated to be in about 10% of the overall gasoline production. The number of consumers would then be apportioned to approximately 10% of the gasoline distributed at self service stations.

Item C was addressed in our formal comments to the Environmental Protection Agency (EPA) on the 19th ITC Report on MTBE. A copy of those comments is included (Attachment 2). The conclusions are summarized here:

- o Gasoline vapor and subsequent MTBE in gasoline vapor exposures have been documented and studied. For the case with gasoline containing 10 Volume % MTBE, worker and consumer exposures would be approximately .06 ppm MTBE on an 8-hour TWA. Considering that fuels containing MTBE are typically blended at 2-8 Volume %, worker exposures would be even less than the .06 ppm value.

04/21/1999

TSCA Docket/EPA

EXHIBIT 12

NJDEP-MTBE-CONTENTION-000052

Ms. Beth Anderson

- 2 -

February 12, 1987

Item D requests more information on the presence and persistence of MTBE in groundwater. We are not aware of any incidents where MTBE contaminated groundwater at manufacturing facilities. Where gasoline containing MTBE is stored at refineries, terminals, or service stations, there is little information on MTBE in groundwater. We feel that there are no unique handling problems when gasoline containing MTBE is compared to hydrocarbon-only gasoline. We are aware of problems reported in the State of Maine with groundwater containing MTBE. Attachment 3 is a paper titled "MTBE as a Groundwater Contaminant". We disagree with the conclusion in the paper's abstract that "...the BTX compounds are more soluble in ether than they are in water. Thus, when gasoline plus MTBE leaks to groundwater, the MTBE spreads both further and faster than the gasoline, and the concentration of gasoline dissolved in groundwater increases." ARCO Chemical has conducted additional testing which supports our position that MTBE will NOT act as a cosolvent and increase the BTX or other gasoline components in the groundwater. Attachment 4 summarizes this report.

Item E - Attachment 5 is an updated list of MTBE manufacturers and the plant locations.

If you have additional questions or require other supplemental information, please contact me at 215-557-3560.

Very truly yours,

*William J. Kilmartin*

W. J. Kilmartin  
Manager, Technical Service

WJK/hlp

ATTACHMENT

04/21/1994

TSCA Docket/EPA

NJDEP-MTBE-CONTENTION-000053

III. Data gaps

A. EPA is unaware of any additional studies relevant to the health effects of MTBE inhalation and ingestion.

- 1) We have received copies of Bio/dynamics Inc. report to API of the following studies: 9-day inhalation toxicity study of MTBE in rats; an inhalation teratology study in rats with MTBE; an inhalation teratology study in mice with MTBE; a single generation inhalation reproduction/fertility study in rats with MTBE; and the metabolic fate of MTBE following acute intraperitoneal injection.

B. TRDS needs more current information on the number of workers and consumers exposed to MTBE.

C. TRDS needs more information on the concentration of MTBE in the "breathing zone" of workers and consumers transferring MTBE-containing gasoline.

D. TRDS needs more information on the presence and persistence of MTBE in ground water.

E. Is this list of manufacturers/distributors complete?

American Petrofina Inc., Big Spring, TX  
Amoco Oil Co., Whiting, IN  
Arco Chemical Co., Newton Square, PA  
Champion Petroleum Co., Humbolt, TX  
Diamond Shamrock, Sunray, TX  
Exxon, Houston, TX  
Hill Petroleum Co., Houston, TX  
Phillips Petroleum, Bartlesville, OK  
Texaco Inc., Beacon, NY  
Texas Petroleum Corp., Houston, TX  
Valero Refining Co., Corpus Christi, TX

04/21/1999

TSCA Docket/EPA

NJDEP-MTBE-CONTENTION-000054

# **EXHIBIT 14**



40-8713012

MTBE COMMITTEE

1330 Connecticut Avenue, N.W., Suite 530  
Washington, DC 20036, Tel. 202-659-0600  
Executive Director: George S. Dominguez

(02/30)

February 27, 1987

Dr. Beth Anderson  
TS-778 Room 100 RE Hall  
Test Rules Development Branch  
Environmental Protection Agency  
401 M Street, S.W.  
Washington, D.C. 20460

Re: MTBE Committee Statement on MTBE (CPT5 - 41022)

Dear Dr. Anderson:

As you know from our earlier conversations, the MTBE Committee has recently been formed and I am pleased to submit the attached statement on behalf of the Committee relative to the Federal Register announcement of the ITC's intention to designate MTBE for priority testing consideration under the Toxic Substances Control Act (51 Federal Register 41417, Nov. 14, 1986). The submission is also intended to be responsive to discussions held at the December 15th Focus meeting.

In addition to providing you with this written statement, we would also like to confirm that we will be making a verbal presentation to you and your staff on March 5th at a meeting already scheduled for 10:00 a.m. on that day.

Sincerely,

George S. Dominguez  
Executive Director

GSD/vls

attachments

Affiliated with the Oxygenated Fuels Association

EXHIBIT

14

COMMENTS OF THE MTBE COMMITTEE  
ON THE INTERAGENCY TESTING COMMITTEE'S  
RECOMMENDATIONS CONCERNING  
METROL TERTIARY BUTYL ETHER

FEBRUARY 27TH, 1967

INTRODUCTION

The MTBE Committee was recently organized to provide a forum in which to address the environmental, health, safety, legislative and regulatory issues concerning methyl tertiary butyl ether (MTBE) of importance to the public and the producers and users of MTBE. The Committee is dedicated to working cooperatively with the government and the public and to be a source of information to MTBE producers, users, the government and the public. In specific the Committee will:

- Address environmental issues relating to MTBE by (i) collecting data from member companies and other sources and (ii) sponsoring programs to develop data unavailable from other sources.
- Address federal and state regulatory issues relating to MTBE by (i) providing technical data to appropriate regulatory agencies and legislative bodies (ii) meeting with appropriate governmental officials to develop acceptable solutions.
- Make available to interested parties and the general public technical and scientific information relating to the use of MTBE in fuel.
- Provide a forum for the exchange of appropriate information between producers and users of MTBE.

Organization of The Statement

This statement consists of three sections:

- Section I - Health Effects Review Summary
- Section II - Occupational and Environmental Exposure
- Section III - Societal Impact of MTBE Utilization

In preparing this statement, extensive efforts were undertaken by the MTBE Committee and its members to obtain all available published and unpublished health effects studies. In this regard, we would specifically like to call the Agency's attention to the fact that we have been able to locate several unpublished toxicology studies that were apparently unavailable to the ITC in its review of MTBE toxicology data. A summary of these studies is provided in Section I. The full text of the studies is provided in an Appendix to this section. It is important to note that these studies did not indicate any evidence that MTBE poses an unreasonable risk to human health. These studies as well as those which were reviewed by the ITC are in our opinion, sufficient to demonstrate or permit EPA to predict that MTBE does not represent such a risk. Even repeated exposures of rodents or monkeys to levels of 2,000 ppm or greater did not induce any hematological, neural tissue, or other organ effects which indicated a chemical induced toxicity. These conclusions are fully supported in the health effects review section of this paper.

The information contained in Section II on Occupational and Environmental Exposure supports the conclusion that gasoline vapor emissions at service stations and terminals have been measured and the MTBE concentration in these vapors is well below levels which would produce any adverse health effects.

In addition, Section II provides information on the positive effects on air quality of using MTBE as a fuel component, as well as an analysis of the level at which MTBE would be detected as a ground water contaminant in the event of an accidental spill or leakage. We believe that the information provided supports the conclusion that MTBE does not represent a drinking water hazard.

Section III provides information on the societal impact of the use of MTBE as a high octane component for gasoline. The use of MTBE in motor fuels has a number of advantages relative to air quality improvement, all of which are summarized in Section III. If a test rule is issued requiring chronic testing that will take 3 - 4 years to complete, great uncertainty will be created as to whether MTBE is a safe fuel additive. As a result demand for MTBE and expansion of productive capacity is not likely to grow significantly. Refiners will be likely to commit capital to more costly alternative methods of octane enhancement such as isomerization and reformate plants that do not have the environmental benefits of MTBE. Thus, requiring long term testing of MTBE will have a significant adverse environmental and economic impact.

#### Statutory Criteria

To issue a Section 4 test rule for MTBE EPA must make all of the following findings:

- (1)(A) MTBE may pose an "unreasonable risk" of harm to health or the environment; or
- (B) MTBE is produced in "substantial quantity" and may reasonably be anticipated to result in "substantial environmental release" or "significant or substantial human exposure"; and
- (2) insufficient data exists about the health or environmental effects of MTBE to reasonably determine or predict the impact on health or the environment of manufacturing, processing, distribution, use and disposal, and
- (3) testing is needed to develop such data.

In addition, to making the above findings, EPA must consider the economic impact of the tests required under the rule.

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in addition to the alternatives proposed for the MTBE-contaminated areas.

II. Thresholds of Detectability

1. Detectable Levels

a. Detectable Levels

Data presented in the MTBE Focus Meeting held by EPA on December 17, 1996, referenced a paper by P. Clark et al (Exhibit X-7) which mentioned that "...people can detect the odor of MTBE in their water at concentrations as low as 10-50 parts per billion...."

As a result of this surprisingly low detectable level mentioned, a data search was conducted for data which would corroborate or question the same detectability levels. Data from Shell Oil Co. was obtained (Attachment X-11). The Shell data show significantly higher levels for the threshold of detectability of MTBE in water i.e. about 700 ppb.

The Shell data was based on studies employing a panel of people. The use of a panel is a widely accepted industry technique. This does not preclude the possibility that certain individuals may have much lower thresholds of noticeability for certain odors or tastes.

The question of detectability levels in water is significant. The lower the detectability level of MTBE in water,

and the fact that the odor detection level of MTBE is 700 ppb (approximately 0.7 mg/l) is such that the organoleptic properties of MTBE are sufficient to protect against human ingestion of toxic quantities of MTBE.

hence, whether one considers the 700 ppb detection level as determined by Shell or the much lower 25-50 ppb level as presented in reference I-7, it does not appear that harmful levels of MTBE from ground water containing MTBE will be ingested before people are aware by taste and smell that MTBE is present in the water.

#### b. MTBE in Groundwater

The results of a number of acute and subchronic health effect studies are presented in the Health Effects Review Summary section of this report. These data suggest that the odor detection level of 700 ppb (approximately 0.7 mg/l) is such that the organoleptic properties of MTBE are sufficient to protect against human ingestion of toxic quantities of MTBE.

#### 2. Co-solvent Effects

Claims have been made by Garrett, et al (Exhibit I-7) that MTBE in groundwater will increase the concentration of other less soluble gasoline components, particularly aromatics, dispersed from the leak to the ground water.

12.

...the extraction of aromatic hydrocarbons by  
 at the concentration levels anticipated for MTBE  
 in gasoline i.e. the two were run at 10 volume  
 concentration MTBE.

of Exhibit I-7 by Prof. Paul Roberts at Stanford  
 y (Exhibit I-9) indicate that the situation was  
 ive based on what he had seen from Exhibit I-7.  
 ions sent Dr. Robert Arco's own data and asked  
 sation and review. This evaluation and review  
 or upcoming within the next few weeks. This  
 will be transmitted to EPA for consideration  
 ion of MTBE solvency affect on aromatics.

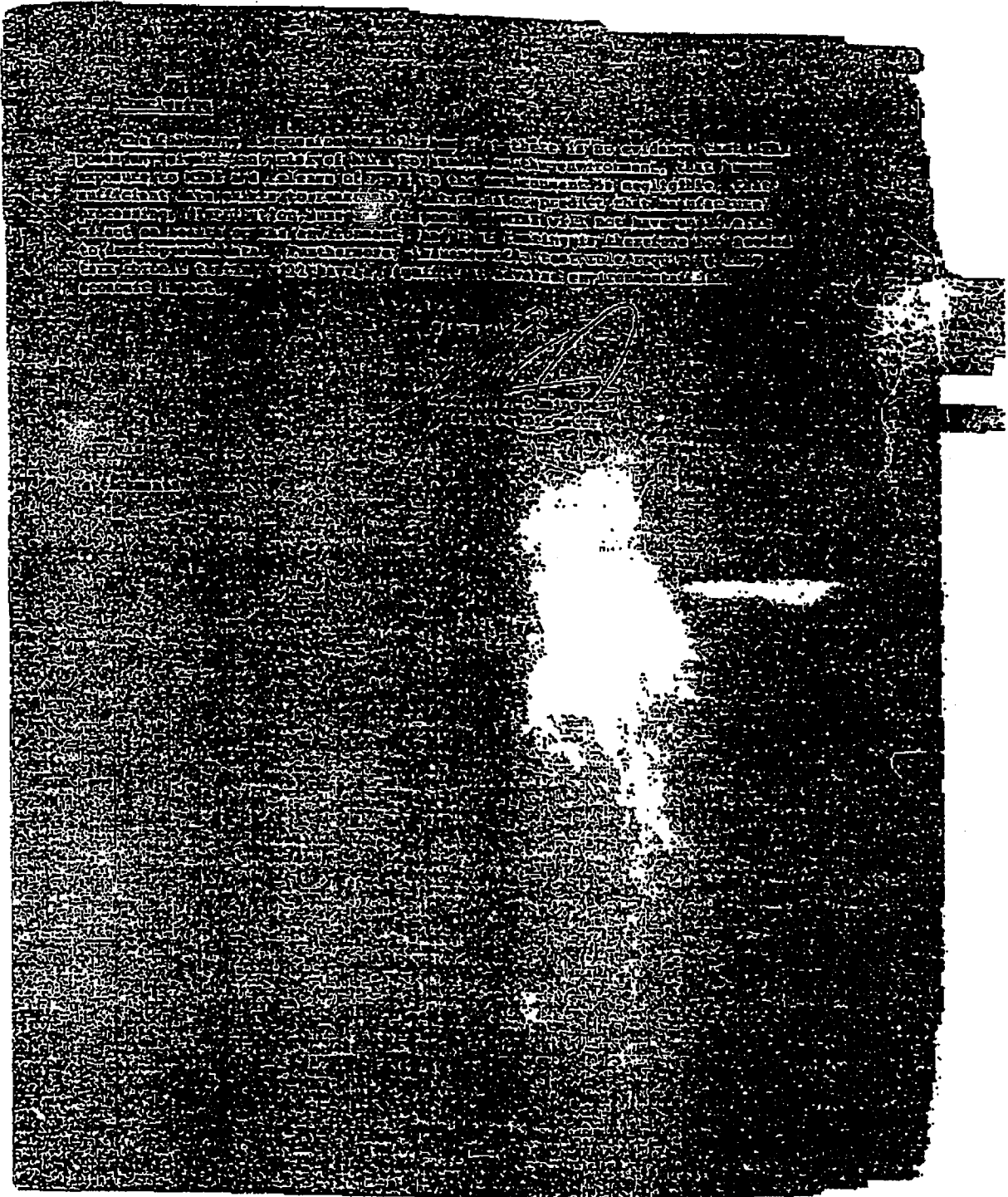
#### Resistance

ty of MTBE is an important consideration:

stability is a well known phenomenon  
 enced both in the air and in opera-

stability is a less well known





# **EXHIBIT 15**

1988 HEALTH AND ENVIRONMENTAL PROJECT PROPOSALS

ISSUE/TITLE: Motor Gasoline and Water Management  
(Groundwater) Chemical Fate of Octane Enhancers in  
Groundwater

OBJECTIVE: To determine the chemical characteristics and fate of  
BTX and ether/Alcohol solutions under in-situ experimental  
groundwater spill conditions. Specifically, plume delineation,  
octane enhancer "cosolubility" characteristics, and  
biodegradation will be investigated.

DRIVING FORCES/IMPACT: As a result of lead phase-down, octane  
enhancers such as MTBE and various alcohols are increasingly being  
used as substitutes for lead. There has recently been a dramatic  
increase in regulatory interest/concern over these  
alcohols/ethers in groundwater. Maine is considering banning the  
use of MTBE. Without field data to address the concerns of the  
regulatory community, regulatory action can be expected (probably  
within a 1-3 year time frame.)

DESCRIPTION: This project would consist of groundwater field  
studies, laboratory water quality analysis, a modest literature  
review and report preparation. Data generated would include  
characterization of plumes under water table conditions, the  
degree to which selected alcohols/ethers act as cosolvents for  
BTX compounds, and the nature of in-situ biodegradation of these  
solutions.

POSSIBLE OUTCOMES AND CONSEQUENCES: The objectives of the  
research can be accomplished, as has been well-demonstrated with  
recent Task Force research on in-situ BTX plumes. The industry  
segments most likely to benefit from the research are  
refining/marketing. If the research is not conducted, there will  
be few credible data to support industry's contention that such  
octane enhancers do not constitute a significant new groundwater  
contamination threat as constituents of gasoline.

ESTIMATED DURATION: 1-2 years

ESTIMATED BUDGET: \$125K

PRIOR COSTS: None

FUTURE COSTS: \$80K

SUBMITTED BY: Gene Mancini (ARCO)

#9:catchI

Ranked 1<sup>st</sup>

EQ-SH156 0034

EXHIBIT 30

NJDEP-MTBE-CONTENTION-000107